

DOCUMENTED RELEASE SAMPLING REPORT

FOR

MARQUEZ URANIUM MINE GRANTS LEGACY URANIUM SITES GRANTS, MCKINLEY COUNTY, NEW MEXICO

Prepared for

U.S. Environmental Protection Agency Region 6

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Contract No. EP-W-06-042

Technical Direction Document TO-0035-12-11-02

WESTON Work Order No. 20406.012.035.0783.01

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718985

EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency (EPA) tasked Weston Solutions, Inc. (WESTON®), the EPA Region 6 Superfund Technical Assessment and Response Team (START-3) contractor, to conduct Documented Release Sampling (DRS) at the Marquez Uranium Mine Site located near San Mateo, McKinley County, New Mexico.

The Marquez Uranium Mine was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) under CERCLIS No. NMN000607486. On 23 August 2011, the EPA conducted an Airborne Spectral Photometric Environmental Collection Technology (ASPECT) overflight of the San Mateo area and collected measurements for exposure rate, total count rate, and elemental uranium. Results from the ASPECT overflight indicated elevated radiation exposure rates and gamma radiation activity (total count rate). The ASPECT overflight results also indicated that elemental uranium was detected at concentrations that were greater than 30 picocuries per gram (pCi/g).

START-3 (the EPA team) conducted DRS at the Marquez Uranium Mine Site on 02 and 03 March 2013 that included collecting surface gamma radiation measurements in addition to conducting sampling and performing chemical/radiological analyses of surface soil. The specific sampling objectives for the DRS were to collect data that could be used to document a potential release of hazardous substances to the environment and to potentially warrant further site investigation and/or reclamation. Based on the results of the DRS sampling event, soil contamination attributable to the Marquez Uranium Mine was documented via these contributing factors:

- Sixty-four of the 83 stationary 1-minute gamma measurement locations had readings higher than two times the mean background average reading of 9,787 (counts per minute (cpm)), indicating a documented release at the Marquez Uranium Mine Site.
- Radium 226 (Ra-226) soil sampling results from the Marquez Uranium Mine ranged from 13.8 to 2,520 pCi/g. All 11 sample results exceeded three times the background Ra-226 result average of 0.796 pCi/g for the mine. This indicates a documented release at the Marquez Uranium Mine Site.
- Arsenic, barium, beryllium, calcium, lead, magnesium, mercury, molybdenum, selenium, uranium, and vanadium were detected in soil samples that exceeded three times background concentrations, indicating a documented release at the Marquez Uranium Mine.

This Documented Release Sampling Report has been prepared to describe the technical scope of work that was completed as part of the Technical Direction Document (TDD) No. TO-0035-12-11-02 under Contract No. EP-W-06-042 for EPA Region 6. The EPA Site Assessment Manager (SAM) was Mark Purcell, and the START-3 Project Team Leader (PTL) was Patrick Buster.

☐

The EPA Task Monitor did not provide final approval of this report prior to the completion date of the work assignment. Therefore, Weston Solutions, Inc. has submitted this report absent the Task Monitor's approval.

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1. INTRODUCTION

WESTON, the EPA Region 6 START-3 Contractor, was tasked by EPA under Contract Number EP-W-06-042, TDD No. TO-0035-12-11-02 (Appendix G) to conduct Documented Release Sampling (DRS) at the Marquez Uranium Mine located in McKinley County, New Mexico. Site coordinates are Latitude 35.343358° North and Longitude -107.759972° West. A Site Location Map is provided as Figure 1-1. All figures and tables are provided as separate portable document format (PDF) files. START-3 has prepared this DRS Report to provide the EPA with the field radiation scanning results and present the analytical data obtained during the field investigation performed at the Marquez Uranium Mine.

1.1 SITE BACKGROUND

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), WESTON was tasked to perform DRS at the Marquez Uranium Mine (“the Site”) located near San Mateo, McKinley County, New Mexico.

The Marquez Uranium Mine was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) under CERCLIS No. NMN000607486. On 23 August 2011, EPA conducted an Airborne Spectral Photometric Environmental Collection Technology (ASPECT) overflight of the San Mateo area and collected measurements for exposure rate, total count rate, and elemental uranium. Results from the ASPECT overflight indicated elevated radiation exposure rates and gamma radiation activity (total count rate). Figure 1-2 presents the ASPECT overflight exposure rate results. The gamma radiation readings at the Marquez Mine Site were statistically greater than background readings in the area. Additionally, according to the New Mexico Environment Department (NMED) Ground Water Quality Bureau Pre-CERLCIS Screening Assessment of the Marquez Mine, issued October 2010, the last documented site reconnaissance was performed in September 2010 by a New Mexico Energy, Minerals and Natural Resources Department (NMEMRD) contractor (Reference 1).

This report has been prepared to provide available background information collected for the Marquez Uranium Mine, discuss the DRS activities, and present the analytical data obtained as part of the investigation.

1.2 OBJECTIVES OF THE INVESTIGATION

After reviewing the NMED memorandum and reviewing the results obtained from the ASPECT overflight, EPA concluded that an investigation was needed to determine if hazardous substances have been released to the environment from past historical mining activities and despite reclamation histories of the mine. This investigation is designed to provide a high-confidence determination by direct observation, field measurement, and laboratory analysis that a hazardous substance has been released at the mine site, termed a “documented release.” The definition of a release under CERCLA (Section 101(22)) is *“[A]ny spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant)...”* For the purpose of this investigation, a documented release can be established by chemical analysis that requires attributing the hazardous substance to the site, determining background concentrations, demonstrating that the concentration of the hazardous substance in a release sample is significantly increased above site background concentrations, and attributing some portion of the significant increase to the site. EPA will use this information obtained during the DRS to determine if additional investigation and/or reclamation is warranted and to prioritize those actions for all uranium mines in the Grants Mining District.

1.3 SCOPE OF WORK

The DRS Scope of Work is intended to describe the tasks requiring completion in order to evaluate the Marquez Uranium Mine. As part of this DRS, the EPA team performed the following major tasks:

- Prepared a site-specific Quality Assurance Sampling Plan (QASP), approved by the EPA, and Health and Safety Plan (HASP) prior to sampling activities.

- Evaluated available information from the on-site observations, historical aerial photographs, area environmental information, and historical documents provided by EPA.
- Conducted DRS field sampling/scanning activities on 02 and 03 March 2013. Samples were collected at various locations with the highest 1-minute stationary gamma measurements. The samples were collected in general accordance with the site-specific QASP and HASP to document the presence and migration of hazardous substances attributable to the Site.
- Submitted the DRS samples to National Environmental Laboratory Accreditation Program (NELAP) certified laboratories for analysis and reviewed and tabulated the resulting data.
- Compared the laboratory results to three times the background concentrations to establish a documented release.
- Prepared this report to present the findings of the DRS.

1.4 REPORT FORMAT

The DRS report contains the following sections:

- Section 1 – Introduction
- Section 2 – Site Characteristics
- Section 3 – Documented Release Sampling
- Section 4 – Summary
- Section 5 – References

Additional information is provided in the following appendices:

- Appendix A Digital Photographs
- Appendix B Site Logbook
- Appendix C Quality Assurance Sampling Plan
- Appendix D Laboratory Data Packages
- Appendix E Laboratory Data Validation Packages
- Appendix F Reference Documentation
- Appendix G TDD No. 0035-12-11-02

Tables and figures cited in this report are provided as separate PDF files. Photographs taken during the DRS activities are provided as Appendix A. Field logbook notes are provided as Appendix B. The site-specific QASP is provided as Appendix C.

2. SITE CHARACTERISTICS

Information regarding the site location, description, and site history is included in the following subsections.

2.1 SITE LOCATION AND DESCRIPTION

The Marquez Uranium Mine Site is within the Ambrosia Lake Mining Subdistrict, located 14 miles north-northwest of Grants in McKinley County, New Mexico. The reclaimed area of the Marquez Mine Site is approximately 38 acres in size and was in operation from at least 1958 to 1966. From 1970 to 1972, Kerr-McGee controlled the site; however, mining operations were idle.

2.2 SITE HISTORY

The Marquez Mine Site was an underground mine during operation, where 723,302 tons of ore was produced. San Mateo Creek is present on the north side of the site, where water flows to the southwest to Rio San Jose. Site reclamation began in 1987. First, the decline was backfilled with soil, and the waste piles were re-contoured. Site features and conditions are most recently documented in reports from a Pre-CERCLIS screening assessment (PCS) from the New Mexico Environment Department, an Abandoned Uranium Mine Assessment (AUM) from the New Mexico Energy, Minerals and Natural Resources Department, and from an EPA Airborne Spectral Photometric Environmental Collection Technology (ASPECT) survey conducted on 23 August 2011. The gamma radiation readings at the Marquez Mine Site were statistically greater than background readings in the area.

3. DOCUMENTED RELEASE SAMPLING

The specific information regarding field observations, sampling activities, background determination, gamma scanning and measurements, soil sampling, and deviations from the QASP are included in the following subsections (Reference 2).

3.1 OVERVIEW

The EPA team was tasked to conduct DRS at the Marquez Uranium Mine Site, including collecting environmental samples, gamma scanning approximately 10% of the Site and collecting 83 stationary 1-minute gamma measurements. The specific sampling objectives were to collect data that could be used to document a release of hazardous substances to the environment as a result of historical mining operations. The Contaminants of Concern (CoCs) included all identifiable gamma emitting radioisotopes, specifically, the daughters of uranium-238 (U-238) and radium-226 (Ra-226). Additional CoCs included arsenic, molybdenum, selenium, and total uranium.

The EPA team implemented the Quality Assurance Sampling Plan (QASP) at the Marquez Uranium Mine Site on 02 and 03 March 2013 and collected gamma measurements sufficient to provide approximately 10% coverage of the surface area of the Site. Figure 3-1 illustrates the assessment area. Mine area gamma radiation distribution results are presented in Table 3-1. In addition, 1-minute stationary gamma measurements were collected at 83 evenly spaced grid locations throughout the mine area. The stationary gamma measurements are listed in Table 3-2 and the locations are presented on Figure 3-2. In addition, 10 soil samples and 1 duplicate soil sample were collected at the 1-minute stationary locations that had elevated gamma activity. Sample locations are illustrated on Figure 3-2. Four background soil samples (Figure 3-1) were collected to the north, east, south, and west beyond the perimeter of the mine area, and 1-minute stationary readings were collected at each location. The locations of the background samples are presented on Figure 3-1, and the 1-minute gamma measurements are listed in Table 3-2.

Surface soil samples were collected and submitted to a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory for the following analyses: total metals including arsenic, molybdenum, selenium, and total uranium by Methods SW846 6010/6020 and 7470/7471, and all identifiable gamma emitting radioisotopes by Method LANL ER-0130 gamma

spectrometry. The analytical data were validated by START-3. Laboratory analytical results for radioisotopes and metals are presented in Tables 3-3 and 3-4, respectively. The laboratory data packages are included in Appendix D. The validated laboratory data packages are included in Appendix E.

3.2 FIELD OBSERVATIONS

The site reconnaissance took place on 02 and 03 March 2013. The weather was sunny, with a high temperature of 61 degrees Fahrenheit and light winds. The mine area was generally flat, despite multiple deep ravines in the San Mateo Creek area, and the area was fairly uniformly covered in desert grass vegetation and shrubs, although grass/shrub density varied depending on location. During the site reconnaissance, it was noted that the surface of the mine area mostly consisted of a gray soil that appeared to be some type of fill and/or capping material. Gamma readings of the grayish colored fill were significantly more elevated than on other areas of the Site. San Mateo Creek is to the north of the site, and there was a significant amount of wind-blown sand within the creek bed. At the time of the site reconnaissance, conditions were extremely dry, and no surface water was noted within the creek bed or on the Mine Site. With the Mine Site in the immediate vicinity of San Mateo Creek, there is a possibility that sediment, soil, and mining waste could be transported off-site with high winds or flash-flooding. However, during the Site reconnaissance, very few elevated gamma readings were noted within San Mateo Creek.

3.3 BACKGROUND DETERMINATION

The QASP (Reference 2) protocol determined the background for the individual site as the mean of the field measurements and laboratory results of samples collected from four locations at the perimeter of the property. These four sample locations corresponded to the four cardinal directions of the compass (north, east, south, and west). The protocol indicates that a site background location should have similar physical, chemical, geological, radiological, and biological characteristics of the legacy mine site if there are no impacts from uranium mining and milling at the Site. Four background soil samples were collected north, east, south, and west of the Marquez Uranium Mine, where 1-minute stationary gamma measurements were also collected.

3.4 GAMMA SCANNING

Due to the size of the Marquez Uranium Mine, it was determined that approximately 10% of the surface area would be scanned using a 2 inch X 2 inch NaI detector held approximately 1 meter above the ground surface in conjunction with a Global Positioning System (GPS) unit. Although the reclaimed area of the Marquez Uranium Mine Site is unknown, only 38 acres of the primary historical mining area was assessed. The area was selected by reviewing historical imagery and only assessing the most disturbed areas of the mine site. Evenly placed transects were walked across the mine site from one end of the disturbed claim boundary to another. Each transect was approximately 10 meters apart. One-second measurements of gamma activity were recorded and electronically attached to the appropriate GPS designation for the subsequent plotting and depiction of the ambient gamma activity. A total of 16,271 gamma radiation measurements were collected from the mine site, ranging from 6,955 cpm to 675,933 cpm. Marquez Uranium Mine gamma radiation results and statistics are provided in Table 3-1 and on Figure 3-1.

3.5 STATIONARY GAMMA MEASUREMENTS

Stationary 1-minute gamma measurements were collected at 83 (140-foot) evenly spaced grid locations across the Marquez Uranium Mine Site, using the same type of instrumentation and at the same height above the ground surface as the gamma scanning measurements. Because the stationary measurements are integrated over 1-minute intervals versus 1-second intervals, the measurements provide a more accurate measurement of the ambient gamma activity at that point. The QASP protocol states that a single-point measurement greater than two times the background average concentration indicates a documented release at the mine (Reference 2). At the 83 total stationary locations, gamma measurements ranged from 9,558 counts per minute (cpm) to 585,601 cpm, with 64 measurements exceeding two times the background average measurement of 9,787 cpm. The stationary measurement locations and measurements are illustrated in Figure 3-2 and presented in Table 3-2.

3.6 SOIL SAMPLING

Ten soil samples (including 4 background and 1 duplicate sample) were collected at 0 to 6-inch depths at locations identified by the stationary measurements as being suspect. Figure 3-2 depicts the sampling locations, and Table 3-2 presents the 1-minute stationary gamma measurements at each sample location. Surface soil samples were collected and submitted for total metals including total uranium, molybdenum, tin, and mercury by Methods SW846 6010/6020 and 7470/7471, and all identifiable gamma emitting radioisotopes by Method LANL ER-0130 Gamma Spectrometry. The QASP states that if any sample contains U-238 as determined by alpha spectrometry or Ra-226 as determined by gamma spectrometry at a concentration equal to or greater than three times the mean background average concentration, the Site will be identified as having a documented release (Reference 2). All 11 soil samples from the Marquez Uranium Mine Site exceeded three times the background average concentration for Ra-226. The analytical data were validated by START-3. The metals and radioisotopes laboratory results are included in Tables 3-3 and 3-4. Laboratory data are presented in Appendix D, and the validated laboratory data packages are included in Appendix E.

3.7 DEVIATIONS FROM THE QASP

The following deviations from the QASP occurred during the field work:

- Only 83 of the 85 stationary measurements were collected. Two of the locations were omitted due to inaccessible terrain.

4. SUMMARY

The EPA team conducted DRS at the Marquez Uranium Mine Site on 02 and 03 March 2013 that included collecting surface gamma radiation measurements in addition to conducting sampling and performing chemical/radiological analyses of surface soil. The specific sampling objectives for the DRS were to collect data that could be used to document a potential release of hazardous substances to the environment and to potentially warrant further site investigation and/or reclamation. Based on the results of the DRS sampling event, soil contamination attributable to the Marquez Uranium Mine Site was documented via these contributing factors:

- Sixty-four out of the 83 stationary 1-minute gamma measurement locations had readings higher than two times the mean background average of 9,787 cpm, indicating a documented release at the Marquez Uranium Mine Site.
- Ra-226 soil sampling results for the Marquez Uranium Mine ranged from 13.8 to 2,520 pCi/g. All eleven soil sample results significantly exceeded three times the background Ra-226 result average of 0.796 pCi/g. This indicates a documented release at the Marquez Uranium Mine Site.
- Arsenic, barium, beryllium, calcium, lead, magnesium, mercury, molybdenum, selenium, uranium, and vanadium were detected in soil samples that exceeded three times background concentrations, indicating a documented release at the Marquez Uranium Mine Site.

5. REFERENCES

1. NMED (New Mexico Environment Department). *Pre-CERCLIS Screening Assessment of the Marquez Mine*. 8 October 2010.
2. Weston Solutions, Inc. *Quality Assurance Sampling Plan for the Marquez Uranium Mine, Grants, McKinley County, New Mexico*. January 2013.



EPA Response Manager Photo Report

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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3804.JPG

Photo Type: Overview

Direction: W

Date/Time: Mar 2 2013 3:28PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Old structure pad located on the site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3805.JPG

Photo Type: Overview

Direction: S

Date/Time: Mar 2 2013 3:31PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Old loading dock located on the mine site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3806.JPG

Photo Type: Overview

Direction: S

Date/Time: Mar 2 2013 3:31PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: One of several piles of metal debris.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3807.JPG

Photo Type: Overview

Direction: NW

Date/Time: Mar 2 2013 3:32PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Concrete pad and metal debris on the southeast side of the mine site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3808.JPG

Photo Type: Overview

Direction: SW

Date/Time: Mar 2 2013 3:32PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Former building locations on the mine site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3809.JPG

Photo Type: Overview

Direction: W

Date/Time: Mar 2 2013 3:33PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Pile of wood, metal, and concrete debris on the south side of the mine site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3810.JPG

Photo Type: Overview

Direction: W

Date/Time: Mar 2 2013 3:35PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: General view over the western half of the former mine site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3811.JPG

Photo Type: Overview

Direction: NW

Date/Time: Mar 2 2013 3:35PM

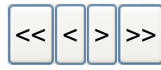
Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Old pipe trending north towards San Mateo Creek.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3812.JPG

Photo Type: Overview

Direction: SW

Date/Time: Mar 2 2013 3:36PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: General view over the southwest portion of the site. Note the Dakota sandstone outcrop.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3813.JPG

Photo Type: Overview

Direction: SE

Date/Time: Mar 2 2013 3:36PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: View towards the southern site boundary. Note Mt. Taylor in the distance.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3816.JPG

Photo Type: Overview

Direction: SE

Date/Time: Mar 2 2013 3:38PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: General view across the center portion of the site.





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Event Name: Marquez Uranium Mine

**Incident
Name:** Marquez Mine

Photo Name: DSCF3815.JPG

Photo Type: Overview

Direction: W

Date/Time: Mar 2 2013 3:38PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: General view of the San Mateo Creekbed. This area of the creek was completely dry during the site assessment.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3814.JPG

Photo Type: Overview

Direction: S

Date/Time: Mar 2 2013 3:38PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Old high pressure gas line sign located immediately south of San Mateo Creek.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3817.JPG

Photo Type: Overview

Direction: S

Date/Time: Mar 2 2013 3:38PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Dakota sandstone outcrop along the southern boundary of the assessment area.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3818.JPG

Photo Type: Overview

Direction: SW

Date/Time: Mar 2 2013 3:38PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: General view across the central area of the site. The Dakota sandstone outcrop is visible.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3820.JPG

Photo Type: Overview

Direction: W

Date/Time: Mar 2 2013 3:39PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: View across the site towards the west. Note the gray soil.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3819.JPG

Photo Type: Overview

Direction: SW

Date/Time: Mar 2 2013 3:39PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: General view across the southwestern area of the site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3821.JPG

Photo Type: Overview

Direction: W

Date/Time: Mar 2 2013 3:39PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: San Mateo Creek and sandstone outcrop on the northern side of the creek.





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Event Name: Marquez Uranium Mine

**Incident
Name:** Marquez Mine

Photo Name: DSCF3822.JPG

Photo Type: Overview

Direction: W

Date/Time: Mar 2 2013 3:43PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: General site photo across the flat, central area of the site. Note the gray colored soil. The highest ludlum readings are located in this general area.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3823.JPG

Photo Type: Overview

Direction: E

Date/Time: Mar 2 2013 3:47PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Wood and metal debris piles located on the east side of the assessment area.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3824.JPG

Photo Type: Overview

Direction: E

Date/Time: Mar 2 2013 3:47PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Pile of old railroad ties and debris located along San Mateo Creek on the former mine site.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3826.JPG

Photo Type: Overview

Direction: NE

Date/Time: Mar 2 2013 3:48PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: View along the San Mateo Creek drainage basin.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3825.JPG

Photo Type: Overview

Direction: N

Date/Time: Mar 2 2013 3:48PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Old pipes located along San Mateo Creek.





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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3828.JPG

Photo Type: Monitoring Location

Direction: N

Date/Time: Mar 2 2013 4:26PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Ludlum reading over gray colored soil located along San Mateo Creek.





EPA Response Manager Photo Report

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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3830.JPG

Photo Type: Overview

Direction: S

Date/Time: Mar 2 2013 4:32PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Old hose exposed in San Mateo Creek cliff face.





EPA Response Manager Photo Report

[Browse Photos](#) [Search Photos](#)



Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3831.JPG

Photo Type: Overview

Direction: NW

Date/Time: Mar 2 2013 4:46PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Rock and fill material exposed in the San Mateo Creek drainage basin.





EPA Response Manager Photo Report

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Event Name: Marquez Uranium Mine

Incident Name: Marquez Mine

Photo Name: DSCF3832.JPG

Photo Type: Overview

Direction: NW

Date/Time: Mar 2 2013 4:47PM

Latitude:

Longitude:

Photographer: Patrick Buster

Witness: Derrick Cobb

Caption: Old pipe buried in sediment within the San Mateo Creek channel.



APPENDIX B

SITE LOGBOOK

MARQUEZ URANIUM
MINE DR S



Rite in the Rain.

ALL-WEATHER
JOURNAL

Nº 391

TDD - TG - 0075-12-11-02

20406.012.075.0783.01

TG-0035-12-11-02
20406.012.035.01

Marquez Uranium Mine DRS

3/2/13

- 1200 Arrive at Marquez mine - escorted by Diane Schmitt. Very extreme off-road conditions. ———— PB
- 1210 Equipment: Gamma scan unit: Trimble Geant Explorer RFW21453 paired with Ludlum 2221 #149459/44-10 PRO33098. Calibration due 12/17/13. 1-minute scalar unit: Ludlum 2221 #163950 / 44-10 # PR12969. Both sources checked this morning prior to Section 15 DRS activities in variance within parameters. EPA Field Team (Western) Patrick Buste- (PTL, FTL), Derrick Cobb, Thomas Evans. Weather: Sunny: 61°F, light winds. ———— PB
- 1230 Begin setting pinflags at 1-minute scalar locations and taking readings. ———— PB
- 1300 Omit locations 70 & 71, as they fall on steep cliffside. ———— PB
- 1430 Finish laying out 83 pinflags. Site has varying topography. San Mateo Creek to the south. Many trash/debris piles, pipes, broken glass, scrap iron/metal. High pressure gas line sigs noted - pipe appears to be no longer in use. Gray material on west side of site appears to drain into creek basin - as well as the remainder of site drainage due to topography.
- 1615 During gamma scan, notice bluetooth malfunction. ~~wired~~ PB wires have broken from solder location ~~within~~ PB within bluetooth device. ———— PB

TG-0035-12-11-02
20406.012.035.01

Marquez Uranium Mine DRS

3/2/13

- 1616 Complete 1-minute scalar counts. Locations to be sampled: 35, 49, 51, 52, 61, 62, 63, 64, 65, 66. Near location #60 - black rock noted: 1.2 million CPM 1-minute scalar reading. Many old structure pads on southeast side of site, lots of metal debris. Gray and tan soil noted. Most of the highest scalar readings centralized on center of site. Large out-crop (Dakota) inhibits gamma scan and blocks GPS signal when below. San Mateo Creek is 100% dry. No wells seen on/near site. ———— PB
- 1706 Depart site to troubleshoot bluetooth. ———— PB
- 1728 Drop off Mr. Elkins (Section 15) keys at Kiva cafe.
- 1735 Arrive at Grants EPA command post. ———— PB
- 1815 Return from Wal-Mart with soldering iron. ———— PB
- 1846 Repair bluetooth. Run test. Functioning properly. PB
- 1900 Will complete gamma scan and collect samples tomorrow - Mrs. Schmitt says its OK to access at any time tomorrow. EPA team will also locate back-sounds. ———— PB
- 2000 Complete data download. End of long day. ———— PB

Rite in the Rain

4

To-0035-12-11-02
20406.012.035.0783.01
5783

Marquez Uranium Mine DRS 3/3/13

0645 Arrive at Grants. EPA Command Post. Load equipment.
Prepare to sample Marquez mine / Gamma scan. Weather:
High 64°F, windy - WSW @ 25 mph. Partly
cloudy. Equipment: Same as yesterday. EPA
team will attempt to locate background sample
locations to the N, E, S, W of site. Safety: hydrate,
picnic day burrows, off-road driving, see HASP
topics. ————— PB

0820 Arrive at Marquez mine site. ————— PB

1100 All samples collected. Duplicates at #5. Complete picking
up pit tags. Will complete gamma scan and then locate
background locations. ————— PB

1240 Complete gamma scan, collect W & S backgrounds. ————— PB

1255 Background E: 7,827 CPM, W: 9,079 CPM, S:
8,511 CPM, N: 13,739. ————— PB

1310 Marquez completes permits to Grants command post
to label sampler for Monday shipment, prep equipment
for shipment, etc. ————— PB

1345 Stop at Wal-Mart - need sample labels to print / duplicates
for pelican cases. ————— PB

1635 Prepare samples. Will ice & seal coolers tomorrow
a.m. - then mob to FedEx in ABQ by 0930. ————— DRS

5

To-0035-12-11-02
20406.012.035.0783.01
0783

Marquez Uranium Mine DRS 3/2/13

Location	Time	Reading (CPM)	Note
1	1225	9,558	
2	1246	87,161	
3	1242	20,660	
4	1228	13,307	
5	1251	18,902	
6	1249	77,093	
7	1247	39,241	
8	1245	18,868	
9	1230	17,980	
10	1314	15,158	
11	1317	14,840	
12	1319	16,723	
13	1321	42,062	Loading area
14	1323	49,386	Loading area
15	1326	55,522	Loading area
16	1328	21,836	
17	1253	27,408	
18	1255	33,717	
19	1252	28,505	
20	1300	97,668	
21	1302	55,597	
22	1307	46,610	
23	1233	27,479	
24	1243	28,702	

Rite in the Rain.

6

TU-0035-12-11-02
20406.012.035.0785.01

Marguez Uranium Mine DK

3/2/13
Note

Location	Time	Reading (cpm)
25	1341	24,145
26	1339	27,785
27	1337	52,442
28	1335	49,711
29	1333	25,336
30	1331	16,540
31	1419	13,132
32	1417	16,013
33	1415	33,330
34	1413	40,542
35	1410	232,815
36	1408	68,897
37	1406	115,657
38	1404	72,504
39	1401	40,698
40	1359	58,415
41	1357	40,698
42	1355	47,866
43	1352	39,988
44	1349	35,489
45	1427	15,480
46	1425	43,646
47	1427	90,392
48	1429	88,635

TU-0035-12-11-02

20406.012.035.0785.01

Marguez Uranium Mine DKS

3/2/13
7

Location	Time	Reading (cpm)	Note
49	1431	212,575	
50	1434	82,983	
51	1436	585,601	
52	1438	191,195	
53	1440	96,259	
54	1442	56,191	
55	1444	22,134	
56	1447	14,975	
57	1449	13,102	
58	1529	17,224 ^{pb}	13,028
59	1531	54,419 ^{pb}	17,724
60	1521	59,201	
61	1519	135,029	
62	1517	166,617	
63	1515	510,086	
64	1513	143,315	
65	1511	135,378	
66	1507	155,002	
67	1507	23,400	
68	1504	22,158	
69	1553	14,110	
70	N/A	N/A	on steep cliff
71	N/A	N/A	on steep cliff
72	1535	21,278	

Rite in the Rain.

T6-0035-12-11-01
 20400.012.035.0785.01
 0783

Marquez Uranium Mine DRS

3/2/11

Location	Time	Reading (CPM)	Note
73	1616	49,313	
74	1609	81,771	
75	1606	111,873	
76	1604	96,600	
77	1602	49,206	
78	1600	21,415	
79	1551	13,872	
80	1537	17,029	
81	1539	29,884	
82	1541	22,510	
83	1543	20,510	
84	1545	47,375	
85	1549	15,858	

APPENDIX C

QUALITY ASSURANCE SAMPLING PLAN

**DOCUMENTED RELEASE SAMPLING
QUALITY ASSURANCE SAMPLING PLAN
FOR
MARQUEZ URANIUM MINE
GRANTS LEGACY URANIUM SITES
GRANTS, MCKINLEY COUNTY, NEW MEXICO**

Prepared for

U.S. Environmental Protection Agency Region 6

Linda Carter, Project Officer
1445 Ross Avenue
Dallas, Texas 75202

Contract No. EP-W-06-042
Technical Direction Document TO-0035-12-11-02
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FPN N/A
EPA SAM: Mark Purcell
START-3 PTL: Patrick Buster

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January 2013

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C	TDD No. TO-0035-12-11-02

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All figures are provided as separate portable document format (PDF) files.

1. INTRODUCTION

Weston Solutions, Inc. (WESTON®), the Superfund Technical Assessment and Response Team (START-3) Contractor, has been tasked by the U.S. Environmental Protection Agency (EPA) Region 6 under Contract Number EP-W-06-042, Technical Direction Document (TDD) No. TO-0035-12-11-02 (Appendix C) to conduct Documented Release Sampling (DRS) at the Marquez Uranium Mine located in McKinley County, New Mexico. Site coordinates are Latitude 35.343358° North and Longitude -107.759972° West. A Site Location Map is provided as Figure 1-1. All figures are provided as separate portable document format (PDF) files. This Quality Assurance Sampling Plan (QASP) describes the technical scope of work to be completed as part of the TDD.

1.1 PROJECT OBJECTIVES

The objective of the DRS is to determine if past mining activities resulted in releases of hazardous substances to the environment at legacy uranium mine sites that have a wide range of reclamation histories. The existence and migration of hazardous substances and identification of the receptors, or targets, potentially exposed to the hazardous substances will be assessed. This Quality Assurance Sampling Plan (QASP) provides the generic guidance for conducting DRS and specific field sampling plans for the Marquez Mine.

The DRS objective will be achieved by evaluating data obtained during the site assessment using a 2 inches by 2 inches NaI detector in conjunction with a Global Positioning System (GPS) unit. The detector will be mounted on a cart or hand-held approximately 15 inches above the soil surface. The instrument will be set with an “open” window to allow detection of the broad spectrum of gamma energies associated with the naturally occurring radionuclides. Samples will be collected from surface soil and potential surface water on-site, downgradient, and at background locations. Sediment samples in the surface water pathway may also be collected during this DRS. Additional samples may be collected to determine specific conditions in anomalous features on-site, if warranted. Section 4.1 describes the laboratory analyses that will be used as part of this investigation.

1.2 PROJECT TEAM

The EPA Project Team will consist of Mark Purcell as the Site Assessment Manager (SAM), Patrick Buster as the Project Team Leader (PTL), a Data Manager (DM), and a Field Team Leader (FTL) who will also act as the Field Safety Officer (FSO). The FTL will oversee collection of the samples as necessary, record the activities at each sample location in the field logbook, and verify sample documentation. Sample documentation and preparation will also be the responsibility of the FTL. The PTL will be responsible for documenting the work performed and will serve as liaison to the EPA SAM.

1.3 QASP FORMAT

This QASP has been organized in a format that is intended to facilitate and effectively meet the objective of the removal assessment. The QASP is organized as follows:

- Section 1 – Introduction
- Section 2 – Site Background
- Section 3 – Sampling Approach and Procedures
- Section 4 – Laboratory Analyses
- Section 5 – Data Validation
- Section 6 – Water Sampling
- Section 7 – Quality Assurance

2. SITE BACKGROUND

Information regarding the site location, description, and site history is included in the following subsections.

2.1 SITE LOCATION AND DESCRIPTION

The Marquez Uranium Mine Site is within the Ambrosia Lake Mining Subdistrict, located 14 miles north-northwest of Grants in McKinley County, New Mexico. The reclaimed area of the Marquez Mine Site is approximately 38 acres in size and was in operation from at least 1958 to 1966. From 1970 to 1972, Kerr-McGee controlled the site; however, mining operations were idle.

2.2 SITE HISTORY

The Grants Mining District provided significant uranium extraction and production in New Mexico from the 1950s until late in the 20th century. Ninety-seven former legacy uranium mines and five mill sites have been identified in the Ambrosia Lake, Laguna, and Marquez subdistricts.

The Marquez Mine Site was an underground mine during operation, where 723,302 tons of ore was produced. San Mateo Creek is present on the north side of the site, where water flows to the southwest to Rio San Jose. Site reclamation began in 1987. First, the decline was backfilled with soil, and the waste piles were re-contoured. Site features and conditions are most recently documented in reports from a Pre-CERCLIS screening assessment (PCS) from the New Mexico Environment Department, an Abandoned Uranium Mine Assessment (AUM) from the New Mexico Energy, Minerals and Natural Resources Department, and from an EPA Airborne Spectral Photometric Environmental Collection Technology (ASPECT) survey conducted on 23 August 2011. The gamma radiation readings at the Marquez Mine Site were statistically greater than background readings in the area.

3. SAMPLING APPROACH AND PROCEDURES

3.1 OBJECTIVE

The objective of this QASP is to develop a standardized assessment process for legacy uranium mines that includes site reconnaissance and limited sampling that can be accomplished by a small work crew of three to five staff members in one work day or less. The QASP includes direct observation, field measurements, soil and water sampling, and laboratory analyses to determine with high confidence if a release of hazardous substances has occurred at the mine site. EPA and Weston Standard Operating Procedures (SOPs) are provided as Appendix A.

3.2 CRITERIA FOR OBSERVED RELEASE AND DATA QUALITY OBJECTIVES

The criteria against which each site will be evaluated are taken from the New Mexico Environmental Department (NMED) draft document *“Generic Field Investigation and Soil/Sediment Sampling Work Plan Guidance to Assess a Legacy Uranium Mine Site for An Observed Release”* dated July, 2011. That document describes the following three numerical criteria that define whether a hazardous substance is present and represents an observed release.

1. The on-site gamma count rate will be compared to the mean background gamma count rate to determine if the count rate is equal to or greater than two times the background mean.
2. Laboratory analyses of soil/sediment samples will be compared to the background isotopic concentrations to determine if the concentration is equal to or greater than three times the background mean.
3. Laboratory analyses of soil/sediment samples will be compared to the background isotopic concentrations to determine if the concentration is equal to or greater than two standard deviations above the background mean.

An observed release is part of the Site Investigation strategy for computing a Hazardous Ranking System (HRS) under CERCLA, which is the program administered primarily by the EPA for evaluation of sites for the Superfund NPL (*“Guidance for Performing Site Inspections Under CERCLA, EPA/540-R-92-021”*). For the purposes of this QASP, the only radioisotopes of concern related to Criteria 2 and 3 above are U-238 and Ra-226. The laboratory analyses will generate data for other radioisotopes (such as K-40) as a bi-product of the analyses, but these

other isotopic data are not relevant to the project objectives and will not be evaluated or compared to any criteria because they are unrelated to uranium mine operations.

More detailed instructions as to how to apply these criteria are discussed in the sections below. However, these criteria are applied to individual measurements or laboratory analyses for each sampling/measurement point. If measurements or laboratory analyses exceed any of these criteria, the site is determined to demonstrate conditions of an “observed release” and is to be considered for further evaluation and possible follow-on action. The criteria are not based on risk or dose, nor are they based on the area size of the impacted soil.

The objective of soil sampling is to determine if a hazardous substance is present and represents an observed release. To accomplish this, data quality objectives (DQOs) have been established and are included in Appendix B. The DQOs presented were developed using the seven-step process set out in the *EPA Guidance for Quality Assurance Project Plans: EPA QA/G-5*.

3.3 DETERMINATION OF BACKGROUND

As stated above, the numerical criteria are relative to either the count rate or soil concentration at some level above the background mean. Therefore, it is critical to accurately identify the background mean for each property or mining claim site. Background radiation has many sources including cosmic, terrestrial, and man-made sources, all of which can contribute to the natural variability of the ambient gamma background count rate level. When considering the natural background concentration of various radioisotopes, uranium 238 (U-238) and its daughter products (particularly Ra-226), in equilibrium, are commonly found in U.S. soils at concentrations ranging from about 0.5 to 1.5 picocuries per gram (pCi/g). However, since uranium mines are normally located in areas geologically enhanced in uranium, the background levels of U-238 and daughters near legacy uranium mines may be above these concentrations. Other radionuclides found in natural background soils include K-40 at typical concentrations ranging from 10 to 25 pCi/g; Th-232 and daughters ranging from 0.5 to 1.5 pCi/g; and Cs-137, a man-made radioisotope from nuclear weapons testing, at about 0.5 pCi/g. Establishing background concentrations that describe a distribution of measurement data is necessary to identify and evaluate contributions attributable to legacy mines.

A site background location should have similar physical, chemical, geological, radiological, and biological characteristics as the legacy mine site if there were no impacts from uranium mining or milling at the site. For purposes of this QASP, the background for each legacy mine site is determined following guidance provided by the Hazard Ranking System (HRS) protocol. The HRS protocol determines the background for the individual site as the mean of field measurements and laboratory analyses of samples collected from four locations at the perimeter of the property corresponding to the four directions of a compass (N, S, E, and W). After locating the four background locations at the perimeter of the mining claim (or at the boundary of the property), each location should be gamma scanned (the technique of gamma scanning is described in a following section) to verify that the area appears to have a homogenous gamma ambient level and a visual confirmation that the other four characteristics listed above appear satisfied. The gamma-scan data (count rate and location) should be saved for data validation and quality control purposes.

Due to the nature of the extended uranium mining in the area, a pre-designated background location may exhibit radiological characteristics that do not appear to meet the HRS requirement for a site background to have similar chemical, physical, radiological, geological, and biological characteristics as the legacy mine site if there were no impacts from uranium mining/milling. If the FTL determines that significantly elevated readings are encountered or physical conditions indicate possible impacts from past mining or milling activities, a background location may be moved to another area reasonably close by. If a more suitable background location cannot be located, a sample will still be collected and data will be recorded from the most suitable location in that immediate area. That background location may be used or omitted from consideration based on final data evaluation when the site report is developed.

At each background location, a 1-minute stationary gamma count rate measurement will be collected with the detector held approximately 15 inches above the ground surface. The count rate and location, as recorded by GPS, will be saved and the mean calculated from these four measurements. At each background location, a soil sample will be collected for radiochemical and stable chemical analyses. A sample of approximately 6-inch depth and 1 kilogram (kg) mass will be collected in a ziplock plastic bag. Rocks of greater than approximately 0.25-inch-diameter should be discarded, as should any biological material such as grass or twigs. Samples

should be analyzed by gamma spectrometry for all detectable radioisotopes by this method and by alpha spectrometry for isotopes of the U-238 and Th-232 decay chains. The suite of metal analytes to be analyzed in each soil sample includes the 23 Target Analyte List (TAL) metals: aluminum, tin, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, thallium, vanadium, zinc, and mercury, plus two additional metals, total uranium and molybdenum. Additional information and specific analytical techniques are discussed in a subsequent section.

3.4 DIRECT OBSERVATION

An observed release means that hazardous substances have been documented on the mine site or in surrounding area soil or water, and that the substances are attributable, at least in part, to the site that is being evaluated. An observed release can be established by direct observation if hazardous substances such as mine ore and/or waste rock that are geologically foreign and mineralogically distinct from the native surface soil and rock composition on the surface of the mine property are present. An observed release can also be established by observation of ore or waste rock transported off-site by wind or water erosion, particularly into nearby drainage channels. Determination of mine surface or off-site hazardous substances by direct observation should be documented by photographs and logbook entries that clearly demonstrate that the site remains impacted by prior mining activities. Determination by direct observation does not quantitatively demonstrate that the numerical criteria have been exceeded, but it is highly likely that subsequent stationary gamma measurements and soil sampling in the areas noted by direct observation will conclusively demonstrate conditions of “observed release.”

3.5 GAMMA SCANNING

Like direct observation, scanning does not provide a quantitative assessment of site conditions but is an excellent tool to assess the relative gamma activity of the area. Scanning is useful in quickly determining the general radiological condition of the site and determining where background radiological conditions exist. It literally paints a picture that depicts where areas of elevated gamma activity are present and identifies where additional measurements and sampling efforts should be placed.

Gamma scanning will be conducted using a 2 inches by 2 inches NaI detector in conjunction with a GPS unit. The detector will be mounted on a cart or hand-held approximately 15 inches above the soil surface. The instrument will be set with an “open window” to allow detection of the broad spectrum of gamma energies associated with the naturally occurring radionuclides. The technician will walk transects at approximately 0.5 meter-per-second from one end of the mine claim boundary to another. One-second measurements of gamma activity are recorded and electronically attached to the appropriate GPS designation for subsequent plotting and depiction of ambient gamma activity. The field-of-view for this detector system is approximately 1 meter wide perpendicular to the direction of the travel. The Marquez Mine Site is approximately 38 acres in size, so 10% coverage will be the objective, and transects will be walked at a distance of approximately 10 meters apart. It is expected that these transects can be completed within eight to ten hours with one monitoring team. The FTL may modify the transect spacing as necessary to ensure maximum site coverage and compliance with project scheduling and time constraints based on actual site conditions encountered in the field.

In addition to walking the transects, the technician will visually search for suspect areas such as waste rock or ore piles, mine portals (adits, shafts, vents, bore holes), machinery, building foundations, haul roads, arroyos, stream beds, or surface impoundments to gamma scan. “Suspect” areas can also be defined as any area where elevated gamma readings are detected. The technician should use the audible signal from the instrument system for guidance to areas of elevated gamma activity. If there are many suspect areas needing to be gamma scanned, a second gamma-scanning system should be employed to help with the survey load.

Data are recorded and plotted in units of gamma counts per minute (cpm). However, the data are collected in counts per second (cps) and then multiplied by 60 seconds/minute to arrive at cpm. Therefore, any slight variation in the collected count rate is magnified by this multiplication. For this reason, it is not unusual for isolated measurements to be significantly elevated above background. These isolated measurements are usually statistical outliers and are not indicative of actual elevated gamma activity. However, any significantly elevated gamma measurements (greater than 2 times background) should be re-investigated, particularly if there is a locus of elevated measurements around a common point.

Data from these gamma scans provide a useful representation of site conditions and will be presented in the site report with a color-coded display to clearly show the various levels of elevated readings. Because of the statistical variation in the readings, the gamma-scanning data are not used for comparison to the observed release criteria for gamma measurements. These data are useful to identify areas where soil samples should be collected and stationary gamma measurements made.

3.6 STATIONARY GAMMA MEASUREMENTS

Stationary 1-minute gamma measurements will be collected at grid points across the property, and at additional suspect locations identified by the gamma-scanning data. Because these stationary measurements are integrated over 1-minute intervals versus 1-second intervals for the scanning measurements, the stationary measurements will be a more accurate measurement of the ambient gamma activity at that point. Stationary measurements will be made with the same type of instrumentation and at the same height above ground surface as the gamma-scanning measurements. The instrument set will again be a 2 inches by 2 inches NaI detector coupled to a GPS system, operated in the “open window” mode, and held at about 15 inches above the ground surface.

The approximate size of the mine site is 38 acres. To collect thorough and sufficient data, grid spacing will be placed at approximately 125-foot-square spacing. This 125-foot grid spacing will generate 85 evenly spaced locations across the property. Assuming 1 minute to collect the data plus 4 minutes of additional time to walk to the next grid point, 85 measurements would require one person approximately 7 to 8 hours to collect, allowing the task to be completed in one work day if performed in parallel with the other site activities. Visual Sample Plan (VSP) software will be used to precisely generate sample locations using the designated grid spacing once the perimeter of the site is established. Each measurement location will be assigned its applicable GPS coordinates and located in the field using an appropriate electronic device. If the size of the mine site is altered or other site conditions change during the site reconnaissance, VSP software will be used to re-establish the number of grids and grid spacing most suitable for the mine site as determined by the FTL.

In addition to the grid locations, stationary 1-minute measurements will be collected at suspect areas as identified by direct observation of the site or by gamma scanning. These measurements will again be collected using the same instrument and GPS system. It is presumed that a second instrument set will be required for these measurements at suspect areas.

Interpretation of these data compares each count rate measurement, collected either from grid points or suspect areas that exhibit elevated gamma readings, with the mean gamma background count rate measurement. If any count rate measurement is equal to or greater than two times (2X) the mean background count rate, the property is identified as having an observed release. It is important to note that a property identified as having an observed release may require no further action eventually if, for instance, the majority of the property has levels equal to background. Clean-up levels for these sites are not established in the document, and the observed release criteria are not the clean-up criteria.

3.7 SOIL SAMPLING

Soil samples of 0 to 6-inch depths and approximately 1 kilogram (kg) mass will be collected at locations identified by the stationary measurements as being suspect. It is recommended that the locations with the highest 1-minute stationary readings be the primary locations considered for sampling. It is expected that about 10 samples will be collected from a typical mine site. When a suspect location is selected for sampling based on the stationary measurement, the potential location will first be carefully examined both visually and by radiological scanning to confirm that the site is free of nuggets of ore or waste rock, or other hot particles that can significantly impact analytical results. It is the intent of soil sample analyses to quantify the residual uranium concentration averaged over the entire 1 kg mass, and therefore a reasonably homogeneous sample is desired.

If the suspect area has a few obvious nuggets or hot spots of contamination that are not typical of a broad area being sampled and can be excised, remove the hot spots and re-survey the potential location. Document in the field log what the conditions were and the number of nuggets or hot spots removed. If the ambient gamma activity is still significantly elevated and the location is therefore a good candidate for sampling, continue collecting the soil sample at this location, and re-collect the 1-minute stationary measurement at the location. If removing the hot spots has also

removed the elevated gamma activity, then another sampling spot should be selected. If the potential sample location is obviously composed of multiple nuggets or hot spots that will likely be excluded when the sample is collected, the sample should not be collected, and another location should be selected for that sample. Again, any non-radioactive rocks of greater than 0.25-inch diameter and any biological material should be removed from the sample, possibly using a sieve. Alternately, if nuggets of elevated radioactivity appear to be widespread and typical for the site, they may be included in the sample if the laboratory has a procedure for crushing and grinding the sample prior to homogenizing, and the laboratory is directed to do so.

4. LABORATORY ANALYSES

4.1 ANALYTICAL METHODS

Samples collected from the background locations and the suspect locations will be submitted to a qualified radiological laboratory for gamma spectrometry analyses. Sample preparation should include drying and homogenization of the entire 1 kg sample. The minimum gamma spectrometry aliquot size should be 0.5 kg. The laboratory will be requested to report all identifiable gamma emitting radioisotopes, specifically, the daughters of U-238, Ra-226, Th-232, and K-40. The requested sensitivity should be 0.1 picocuries per gram (pCi/g). The requested analytical procedure for Ra-226 should be by quantification of Bi-214 after an ingrowth period of at least 21 days. The suite of metal analytes to be analyzed in each soil sample includes the 23 Target Analyte List (TAL) metals: aluminum, tin, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, thallium, vanadium, zinc, and mercury, plus two additional metals, total uranium and molybdenum. Information regarding laboratory, analytical methods, container size, preservation techniques, and hold times is included in Table 4-1.

Since these samples are from legacy mine sites, it is assumed that the U-238 and Th-232 radioisotope decay chains will be in equilibrium. However, due to different solubilities of the chemical species found naturally in the environment, it is possible that the daughters may not be in equilibrium with the parents. Also, it is possible that mill tailings may have been returned to the mine site for storage and/or disposal. If this is the case, then the concentrations of the residual radioisotopes will not be in equilibrium. If it is suspected that any sample may not be in equilibrium, or if verification of equilibrium is desired, then additional analyses for isotopic uranium and isotopic thorium by alpha spectrometry will be requested of the laboratory. Analytical sensitivity of 0.1 pCi/g and a minimum aliquot size of 10 grams will be required. It is recommended that one laboratory be selected for both types of analyses.

4.2 DATA INTERPRETATION

Interpretation of these data compares analytical results of each sample with the background mean concentration. If any sample contains U-238 as determined by alpha spectrometry or Ra-226 as

determined by gamma spectrometry at a concentration equal to or greater than three times (3x) the mean background concentration or at a concentration equal to or greater than two times (2x) the standard deviation above the mean concentration, the property will be identified as having an observed release. No other isotopic results will be compared to background concentrations. However, the project Certified Health Physicist (CHP) will review any analytical data for isotopes other than U-238 and Ra-226 for which the results appear to exceed the two previously described criteria.

Table 4 - 1
Requirements for Containers, Preservation Techniques,
Sample Volumes, and Holding Times
Marquez Uranium Mine
Grants, McKinley County, New Mexico

Name	Analytical Methods	Container	Preservation	Minimum Sample Volume or Weight	Maximum Holding Time
TAL Metals plus total uranium, molybdenum, tin and mercury	SW846 6010/6020 SW846 7470/7471	Polyethylene (water), Glass (solid)	HNO ₃ to pH<2 (water), 4°C	500 mL, 8 oz	28 days for mercury 180 days all other metals
U-238, Ra-226	Gamma Spectrometry	Polyethylene (water), Glass (solid)	NA (soil/water)	1 gallon, 1 kg (32 oz)	6 months
Uranium/Thorium if determined in field	Alpha Spec ASTM 3972-90M	Polyethylene (water), Glass (solid)	HNO ₃ to pH<2 (water), NA (soil)	1 liter, 8 oz	6 months

Radiological methods to be conducted by Eberline Analytical, Oakridge, Tennessee.

TAL Metals analyzed by ALS Laboratories, Fort Collins, Colorado.

5. DATA VALIDATION

5.1 FIELD INSTRUMENTS

Each field instrument will be calibrated on an annual basis by a qualified and registered calibration vendor. Validation of field measurements will be accomplished by maintenance and review of daily background and source checks of the instrument sets. Prior to initiation of field activities, 20 one-minute background counts and 20 one-minute source check counts will be collected and a mean calculated. During field operations, a one-minute background count and one-minute source check count will be made at the start and end of each work day. If the individual one-minute count falls outside of the mean $\pm 20\%$, the instrument will not be used until evaluated by the project CHP. Individual control charts will be maintained for the background and source check on each instrument to monitor instrument performance for trends.

5.2 LABORATORY ANALYSES

Analytical laboratory reports will be reviewed by a CHP to confirm compliance with the technical specifications and reasonableness of the analytical results. Technical specifications reviewed will be that the requested isotopes are reported, that the minimum sensitivity was attained, and the required 21-day in-growth time for Ra-226 was observed. The reasonableness of the data will be evaluated by review of the various gamma spectrometry results to determine if they are in equilibrium, if appropriate, and if the results are within the expected range of results.

6. WATER SAMPLING

6.1 WATER SAMPLING PROCEDURES

WESTON Standard Operating Procedures (SOPs) 1002-01 for Surface Water Sample Collection and 1002-02 for Groundwater Monitoring Well Sample Collection (Appendix A) will be utilized if either groundwater or surface water is observed on or in the vicinity of the mine site. The specific sampling procedures are described below.

6.2 GROUNDWATER PATHWAY SAMPLING

An attempt will be made to collect groundwater samples from any groundwater monitoring wells or home/stock water supply wells that exist either on-site or within 1,000 meters of the nearest property boundary. No wells are known to be on-site. If a well is discovered, survey personnel will measure depth to groundwater in each of the wells and then follow the EPA Guidance for Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures (Appendix A) for sampling the wells, if appropriate. Readings for temperature, pH, and conductivity will be collected every 5 minutes. Once three consecutive readings stabilize for pH (+ 0.5 units), conductivity (+ 10% $\mu\text{mhos/cm}$), and temperature (+ 1°C), or the water has purged for a maximum of 30 minutes, the samples will be collected. The groundwater samples will be analyzed for the same list of radionuclides and TAL metals as were identified for soil samples.

6.3 SURFACE WATER PATHWAY SAMPLING

An attempt will be made to collect a surface water sample and a sediment sample from any surface water impoundments, streams, or stock ponds that exist either on-site or within 1,000 meters of the nearest property boundary to document a release to the surface water pathway from the site. Samples will be analyzed for the same list of radionuclides and TAL metals as were identified for soil samples. No surface water impoundments are known to exist at Marquez Mine Site; however, San Mateo Creek is located on the northern portion of the site. Samples will be collected from water as directed by the EPA if water is present on or around the mine site at the time of the site reconnaissance. If gamma scanning data collected from a drainage pathway are

suspect, soil/sediment sample(s) may be collected and analyzed for the same list of radionuclides and TAL metals as identified for soil samples.

7. QUALITY ASSURANCE

Quality assurance will be conducted in accordance with the WESTON Corporate Quality Management Manual, dated September 2012; the WESTON START-3 Quality Management Plan, dated June 2010; and EPA Quality Assurance/Quality Control Guidance for Removal Activities, dated April 1990. Following receipt of the TDD from EPA, a Quality Control (QC) officer will be assigned and will monitor work conducted throughout the entire project including reviewing interim report deliverables and field audits. The START-3 PTL will be responsible for QA/QC of the field investigation activities. The designated laboratory utilized during the investigation will be responsible for QA/QC related to the analytical work. START-3 will also collect samples to verify that laboratory QA/QC is consistent with the required standards and to validate the laboratory data received.

7.1 SAMPLE CUSTODY PROCEDURES

Because of the evidentiary nature of sample collection, the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. After sample collection and identification, samples will be maintained under chain-of-custody (COC) procedures. If the sample collected is to be split (laboratory QC), the sample will be allocated into similar sample containers. Sample labels completed with the same information as that on the original sample container will be attached to each of the split samples. Personnel required to package and ship coolers containing potentially hazardous material will be trained accordingly.

Sampling personnel will prepare and complete chain-of-custody forms using the Scribe Environmental Sampling Data Management System (SCRIBE) for all samples sent to a designated off-site laboratory. The chain-of-custody procedures are documented and will be made available to personnel involved with the sampling. A typical chain-of-custody record will be completed each time a sample or group of samples is prepared for shipment to the laboratory. The record will repeat the information on each sample label and will serve as documentation of handling during shipment. A copy of this record will remain with the shipped samples at all times, and another copy will be retained by the member of the sampling team who originally

relinquished the samples. At the completion of the project, the data manager will export the SCRIBE chain-of-custody documentation to the Analytical Service Tracking System (ANSETS) database.

Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

- Samples will be accompanied by the COC record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. These custody records document transfer of sample custody from the sampler to another person or to the laboratory.
- Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be custody-sealed for shipment to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be folded over and stuck to seal to ensure that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape.
- If sent by common carrier, a bill of lading or airbill will be used. Bill of lading and airbill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer.

SOPs 1101.01 and 1102.01 describe these procedures in more detail.

7.2 PROJECT DOCUMENTATION

Documents will be completed legibly and in ink and by entry into field logbooks, Response Manager, or SCRIBE. Response Manager is the Enterprise Data Collection System designed to provide near real-time access to non-analytical data normally collected in logbooks. Response Manager provides a standard data collection interface for modules of data normally collected by field personnel while on-site. These modules fall into two basic categories for Response and Removal. The modules include Emergency Response, Reconnaissance, Facility Assessment, Shipping, Containers, Materials, Calls, HHW, and General/Site-Specific data. The system provides users with a standard template for laptop/desktop/tablet PCs that will synchronize to the secure web interface using merge replication technology to provide access to field collected data on the RRC-EDMS EPA Web Hub. Response Manager also includes a PDA application that provides some of the standard data entry templates from Response Manager to users for field

data entry. Response Manager also includes an integrated GPS unit with the secure PDA application, and the coordinates collected in Response Manager are automatically mapped on the RRC-EDMS interactive mapping site. GIS personnel can then access this data to provide comprehensive site maps for decision-making support.

Response Manager also includes an Analytical Module that is designed to give SCRIBE users the ability to synchronize the SCRIBE field data to the RRC-EDMS Web Hub. This allows analytical data managers and data validators access to data to perform reviews from anywhere with an Internet connection. The Analytical Module is designed to take the analytical data entered into EPA SCRIBE software and make it available for multiple users to access on one site. START-3 personnel will utilize SCRIBE for data entry on-site and will upload to the Response Manager Analytical module.

7.2.1 Field Documentation

The following field documentation will be maintained as described below.

Field Logbook

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed. Entries will be signed by the individuals making them. Entries should include, at a minimum, the following:

- Site name and project number.
- Names of personnel on-site.
- Dates and times of all entries.
- Description of all site activities, including site entry and exit times.
- Noteworthy events and discussions.
- Weather conditions.
- Site observations.
- Identification and description of samples and locations.
- Subcontractor information and names of on-site personnel.
- Dates and times of sample collections and chain-of-custody information.
- Records of photographs.
- Site sketches.
- Calibration results.

Sample Labels

Sample labels will be securely affixed to the sample container. The labels will clearly identify the particular sample and include the following information:

- Site name and project number.
- Date and time the sample was collected.
- Sample preservation method.
- Analysis requested.
- Sampling location.

Chain-of-Custody Record

A chain-of-custody will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed for and a copy of the record will be kept by each individual who has signed it. The chain-of-custody is discussed in Subsection 7.1 Sample Custody Procedures.

Custody Seal

Custody seals demonstrate that a sample container has not been tampered with or opened. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

Photographic Documentation

START-3 will take photographs to document site conditions and activities as site work progresses. Initial conditions should be well documented by photographing features that define the site-related contamination or special working conditions. Representative photographs should be taken of each type of site activity. The photographs should show typical operations and operating conditions as well as special situations and conditions that may arise during site activities. Site final conditions should also be documented as a record of how the site appeared at completion of the work.

Photographs should be taken with either a film camera or digital camera capable of recording the date on the image. Each photograph will be recorded in the logbook and within Response Manager with the location of the photographer, direction the photograph was taken, the subject of the photograph, and its significance (i.e., why the picture was taken). Where appropriate, the

photograph location, direction, and subject will also be shown on a site sketch and recorded within Response Manager.

7.2.2 Report Preparation

At the completion of the project, START-3 will review and validate all laboratory data and prepare a draft report of field activities and analytical results for EPA review. Draft deliverable documents will be uploaded to the EPA TeamLink website for EPA review and comment.

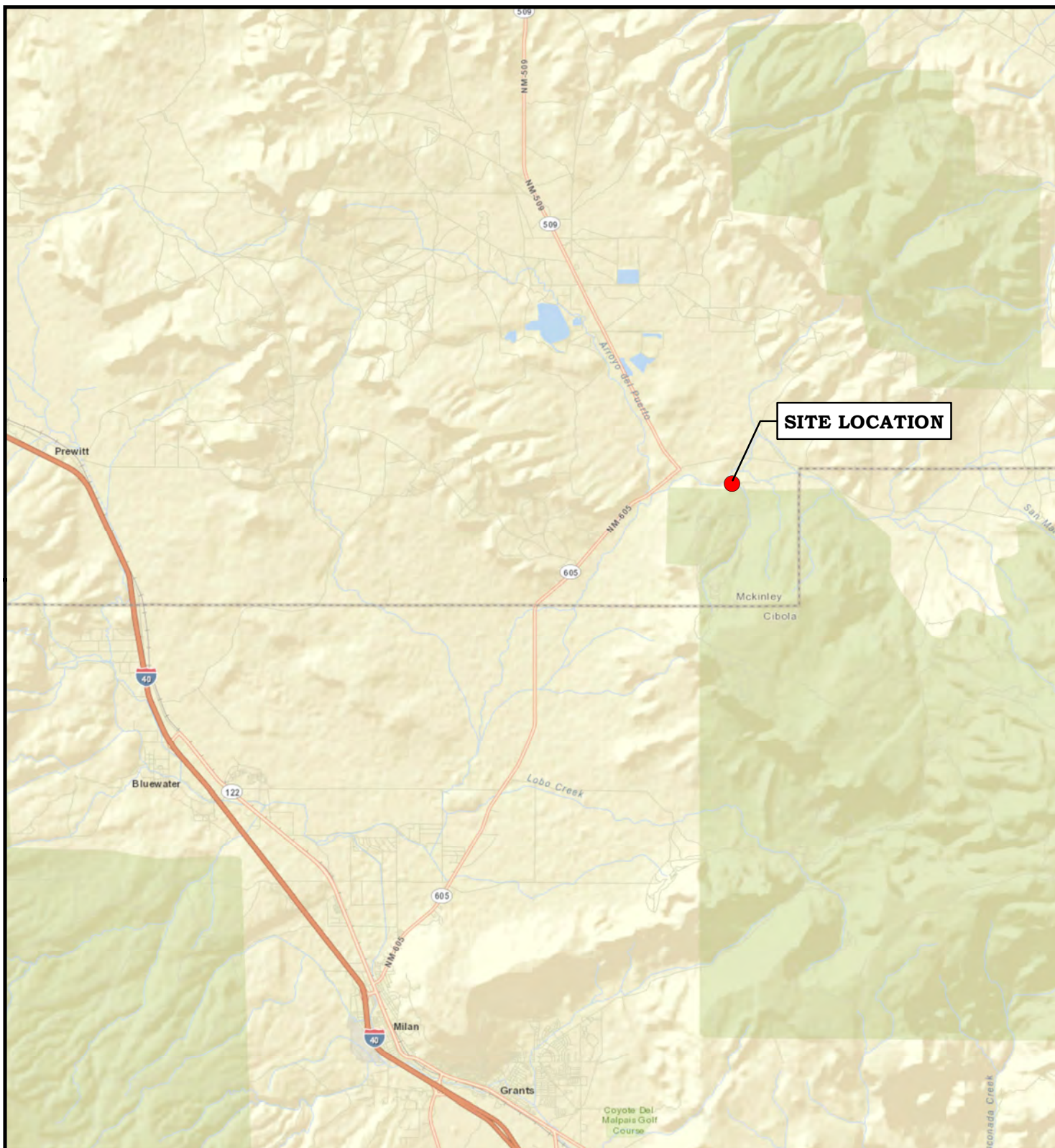
7.2.3 Response Manager

The Response Manager module located on the EPA Web Hub, <https://solutions.westonproject.net/epawebhub/>, will be used to collect and organize the data gathered from project activities. The information to be included will encompass some or all of the following depending on the specific project needs:

- General Module – site-specific data including location and type of site. It also includes an area for all key site locations including geo-spatial data associated with the key site locations.
- Emergency Response Module – includes the following sub-modules: Basic Info, HAZMAT, Release, Time Line Log, Incident Zones, Photos, Sensitive Receptors, Evacuations, Source, Cause, and Weather.
- Reconnaissance Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for targeted reconnaissance efforts. Typically the data in this module is associated with ESF-10 deployments and the clean-up of orphaned containers and hazardous debris, but the module can be utilized for any and all reconnaissance activities.
- Facility Assessment Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for assessments of structures. Typically utilized for EPA-regulated program facilities during an ESF-10 deployment of resources. This module can be utilized to track the assessment of any facilities including multiple assessments of the fixed facilities.
- Shipping Module – provides standard templates for creating a cradle-to-grave record of all waste shipments from the site until they are recycled or destroyed. This includes the ability to capture manifest and manifest line items and upload photos/original documents to support the records.
- Container Module – provides standard templates for cataloguing containers including HAZCAT and Layer information in each container. The module also allows for tracking which containers are bulked.

- Properties Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for collection of property data including access agreements and assessments of the property and current status of property with regard to the site removal action.
- Materials Module – provides standard templates for tracking materials that are brought on-site or that are removed from the site.
- Daily Reports – provides standard templates for tracking daily site activities, daily site personnel, and daily site notes for reporting back to the EPA OSC in a POLREP or SITREP.
- HHW Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for tracking the amount of HHW collected at individual collection stations by HHW type.
- Data Files – data files can be uploaded in the photo module section and be associated with individual records or with the site in general. The meta data associated with that data file can be filled in using the photo log fields.

The data stored in the Response Manager database can be viewed and edited by any individual with access rights to those functions. At any time deemed necessary, POLREPs and/or SITREPs can be generated by exporting the data out of Response Manager into Microsoft Excel/Word. The database is stored on a secure server and backed up regularly.



0 3 6
SCALE IN MILES

LEGEND

● MARQUEZ URANIUM MINE LOCATION



US EPA REGION 6

FIGURE 1-1
SITE LOCATION MAP
MARQUEZ URANIUM MINE
MCKINLEY COUNTY, NEW MEXICO

DATE
DEC. 2012

PROJECT NO
20406.012.035.0783.01

SCALE
AS SHOWN

TDD NO: TO-0035-12-11-02
CERCLIS NO.: NMN00607486
SOURCE: ESRI STREETMAPS

APPENDIX A

EPA GUIDANCE DOCUMENTS AND WESTON STANDARD OPERATING PROCEDURES



Ground Water Issue

LOW-FLOW (MINIMAL DRAWDOWN) GROUND-WATER SAMPLING PROCEDURES

by Robert W. Puls¹ and Michael J. Barcelona²

Background

The Regional Superfund Ground Water Forum is a group of ground-water scientists, representing EPA's Regional Superfund Offices, organized to exchange information related to ground-water remediation at Superfund sites. One of the major concerns of the Forum is the sampling of ground water to support site assessment and remedial performance monitoring objectives. This paper is intended to provide background information on the development of low-flow sampling procedures and its application under a variety of hydrogeologic settings. It is hoped that the paper will support the production of standard operating procedures for use by EPA Regional personnel and other environmental professionals engaged in ground-water sampling.

For further information contact: Robert Puls, 405-436-8543, Subsurface Remediation and Protection Division, NRMRL, Ada, Oklahoma.

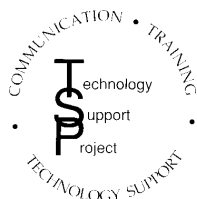
I. Introduction

The methods and objectives of ground-water sampling to assess water quality have evolved over time. Initially the emphasis was on the assessment of water quality of aquifers as sources of drinking water. Large water-bearing

units were identified and sampled in keeping with that objective. These were highly productive aquifers that supplied drinking water via private wells or through public water supply systems. Gradually, with the increasing awareness of subsurface pollution of these water resources, the understanding of complex hydrogeochemical processes which govern the fate and transport of contaminants in the subsurface increased. This increase in understanding was also due to advances in a number of scientific disciplines and improvements in tools used for site characterization and ground-water sampling. Ground-water quality investigations where pollution was detected initially borrowed ideas, methods, and materials for site characterization from the water supply field and water analysis from public health practices. This included the materials and manner in which monitoring wells were installed and the way in which water was brought to the surface, treated, preserved and analyzed. The prevailing conceptual ideas included convenient generalizations of ground-water resources in terms of large and relatively homogeneous hydrologic *units*. With time it became apparent that conventional water supply generalizations of *homogeneity* did not adequately represent field data regarding pollution of these subsurface resources. The important role of *heterogeneity* became increasingly clear not only in geologic terms, but also in terms of complex physical,

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Technology Innovation Office
Office of Solid Waste and Emergency
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Walter W. Kovalick, Jr., Ph.D.
Director

chemical and biological subsurface processes. With greater appreciation of the role of heterogeneity, it became evident that subsurface pollution was ubiquitous and encompassed the unsaturated zone to the deep subsurface and included unconsolidated sediments, fractured rock, and *aquifers* or low-yielding or impermeable formations. Small-scale processes and heterogeneities were shown to be important in identifying contaminant distributions and in controlling water and contaminant flow paths.

It is beyond the scope of this paper to summarize all the advances in the field of ground-water quality investigations and remediation, but two particular issues have bearing on ground-water sampling today: aquifer heterogeneity and colloidal transport. Aquifer heterogeneities affect contaminant flow paths and include variations in geology, geochemistry, hydrology and microbiology. As methods and the tools available for subsurface investigations have become increasingly sophisticated and understanding of the subsurface environment has advanced, there is an awareness that in most cases a primary concern for site investigations is characterization of contaminant flow paths rather than entire aquifers. In fact, in many cases, plume thickness can be less than well screen lengths (e.g., 3-6 m) typically installed at hazardous waste sites to detect and monitor plume movement over time. Small-scale differences have increasingly been shown to be important and there is a general trend toward smaller diameter wells and shorter screens.

The hydrogeochemical significance of colloidal-size particles in subsurface systems has been realized during the past several years (Gschwend and Reynolds, 1987; McCarthy and Zachara, 1989; Puls, 1990; Ryan and Gschwend, 1990). This realization resulted from both field and laboratory studies that showed faster contaminant migration over greater distances and at higher concentrations than flow and transport model predictions would suggest (Buddemeier and Hunt, 1988; Enfield and Bengtsson, 1988; Penrose et al., 1990). Such models typically account for interaction between the mobile aqueous and immobile solid phases, but do not allow for a mobile, reactive solid phase. It is recognition of this third *phase* as a possible means of contaminant transport that has brought increasing attention to the manner in which samples are collected and processed for analysis (Puls et al., 1990; McCarthy and Degueudre, 1993; Backhus et al., 1993; U. S. EPA, 1995). If such a phase is present in sufficient mass, possesses high sorption reactivity, large surface area, and remains stable in suspension, it can serve as an important mechanism to facilitate contaminant transport in many types of subsurface systems.

Colloids are particles that are sufficiently small so that the surface free energy of the particle dominates the bulk free energy. Typically, in ground water, this includes particles with diameters between 1 and 1000 nm. The most commonly observed mobile particles include: secondary clay minerals; hydrous iron, aluminum, and manganese oxides; dissolved and particulate organic materials, and viruses and bacteria.

These reactive particles have been shown to be mobile under a variety of conditions in both field studies and laboratory column experiments, and as such need to be included in monitoring programs where identification of the *total* mobile contaminant loading (dissolved + naturally suspended particles) at a site is an objective. To that end, sampling methodologies must be used which do not artificially bias *naturally* suspended particle concentrations.

Currently the most common ground-water purging and sampling methodology is to purge a well using bailers or high speed pumps to remove 3 to 5 casing volumes followed by sample collection. This method can cause adverse impacts on sample quality through collection of samples with high levels of turbidity. This results in the inclusion of otherwise immobile artifactual particles which produce an overestimation of certain analytes of interest (e.g., metals or hydrophobic organic compounds). Numerous documented problems associated with filtration (Danielsson, 1982; Laxen and Chandler, 1982; Horowitz et al., 1992) make this an undesirable method of rectifying the turbidity problem, and include the removal of potentially mobile (contaminant-associated) particles during filtration, thus artificially biasing contaminant concentrations low. Sampling-induced turbidity problems can often be mitigated by using low-flow purging and sampling techniques.

Current subsurface conceptual models have undergone considerable refinement due to the recent development and increased use of field screening tools. So-called hydraulic *push* technologies (e.g., cone penetrometer, Geoprobe®, QED HydroPunch®) enable relatively fast screening site characterization which can then be used to design and install a monitoring well network. Indeed, alternatives to conventional monitoring wells are now being considered for some hydrogeologic settings. The ultimate design of any monitoring system should however be based upon adequate site characterization and be consistent with established monitoring objectives.

If the sampling program objectives include accurate assessment of the magnitude and extent of subsurface contamination over time and/or accurate assessment of subsequent remedial performance, then some information regarding plume delineation in three-dimensional space is necessary prior to monitoring well network design and installation. This can be accomplished with a variety of different tools and equipment ranging from hand-operated augers to screening tools mentioned above and large drilling rigs. Detailed information on ground-water flow velocity, direction, and horizontal and vertical variability are essential baseline data requirements. Detailed soil and geologic data are required prior to and during the installation of sampling points. This includes historical as well as detailed soil and geologic logs which accumulate during the site investigation. The use of borehole geophysical techniques is also recommended. With this information (together with other site characterization data) and a clear understanding of sampling

objectives, then appropriate location, screen length, well diameter, slot size, etc. for the monitoring well network can be decided. This is especially critical for new in situ remedial approaches or natural attenuation assessments at hazardous waste sites.

In general, the overall goal of any ground-water sampling program is to collect water samples with no alteration in water chemistry; analytical data thus obtained may be used for a variety of specific monitoring programs depending on the regulatory requirements. The sampling methodology described in this paper assumes that the monitoring goal is to sample monitoring wells for the presence of contaminants and it is applicable whether mobile colloids are a concern or not and whether the analytes of concern are metals (and metal-oids) or organic compounds.

II. Monitoring Objectives and Design Considerations

The following issues are important to consider prior to the design and implementation of any ground-water monitoring program, including those which anticipate using low-flow purging and sampling procedures.

A. Data Quality Objectives (DQOs)

Monitoring objectives include four main types: detection, assessment, corrective-action evaluation and resource evaluation, along with *hybrid* variations such as site-assessments for property transfers and water availability investigations. Monitoring objectives may change as contamination or water quality problems are discovered. However, there are a number of common components of monitoring programs which should be recognized as important regardless of initial objectives. These components include:

- 1) Development of a conceptual model that incorporates elements of the regional geology to the local geologic framework. The conceptual model development also includes initial site characterization efforts to identify hydrostratigraphic units and likely flow-paths using a minimum number of borings and well completions;
- 2) Cost-effective and well documented collection of high quality data utilizing simple, accurate, and reproducible techniques; and
- 3) Refinement of the conceptual model based on supplementary data collection and analysis.

These fundamental components serve many types of monitoring programs and provide a basis for future efforts that evolve in complexity and level of spatial detail as purposes and objectives expand. High quality, reproducible data collection is a common goal regardless of program objectives.

High quality data collection implies data of sufficient accuracy, precision, and completeness (i.e., ratio of valid analytical results to the minimum sample number called for by the program design) to meet the program objectives. Accuracy depends on the correct choice of monitoring tools and procedures to minimize sample and subsurface disturbance from collection to analysis. Precision depends on the repeatability of sampling and analytical protocols. It can be assured or improved by replication of sample analyses including blanks, field/lab standards and reference standards.

B. Sample Representativeness

An important goal of any monitoring program is collection of data that is truly representative of conditions at the site. The term *representativeness* applies to chemical and hydrogeologic data collected via wells, borings, piezometers, geophysical and soil gas measurements, lysimeters, and temporary sampling points. It involves a recognition of the statistical variability of individual subsurface physical properties, and contaminant or major ion concentration levels, while explaining extreme values. Subsurface temporal and spatial variability are facts. Good professional practice seeks to maximize representativeness by using proven accurate and reproducible techniques to define limits on the distribution of measurements collected at a site. However, measures of representativeness are dynamic and are controlled by evolving site characterization and monitoring objectives. An evolutionary site characterization model, as shown in Figure 1, provides a systematic approach to the goal of consistent data collection.

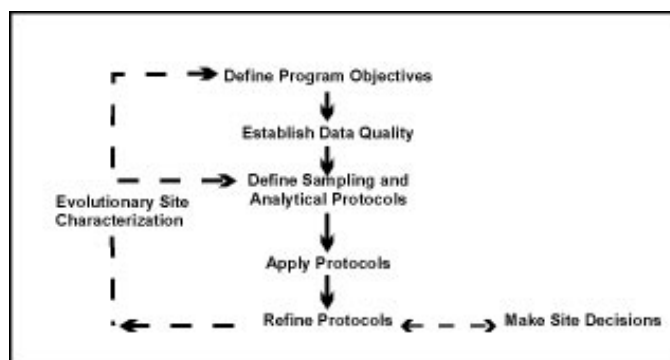


Figure 1. Evolutionary Site Characterization Model

The model emphasizes a recognition of the causes of the variability (e.g., use of inappropriate technology such as using bailers to purge wells; imprecise or operator-dependent methods) and the need to control avoidable errors.

1) Questions of Scale

A sampling plan designed to collect representative samples must take into account the potential scale of changes in site conditions through space and time as well as the chemical associations and behavior of the parameters that are targeted for investigation. In subsurface systems, physical (i.e., aquifer) and chemical properties over time or space are not statistically independent. In fact, samples taken in close proximity (i.e., within distances of a few meters) or within short time periods (i.e., more frequently than monthly) are highly auto-correlated. This means that designs employing high-sampling frequency (e.g., monthly) or dense spatial monitoring designs run the risk of redundant data collection and misleading inferences regarding trends in values that aren't statistically valid. In practice, contaminant detection and assessment monitoring programs rarely suffer these *over-sampling* concerns. In corrective-action evaluation programs, it is also possible that too little data may be collected over space or time. In these cases, false interpretation of the spatial extent of contamination or underestimation of temporal concentration variability may result.

2) Target Parameters

Parameter selection in monitoring program design is most often dictated by the regulatory status of the site. However, background water quality constituents, purging indicator parameters, and contaminants, all represent targets for data collection programs. The tools and procedures used in these programs should be equally rigorous and applicable to all categories of data, since all may be needed to determine or support regulatory action.

C. Sampling Point Design and Construction

Detailed site characterization is central to all decision-making purposes and the basis for this characterization resides in identification of the geologic framework and major hydro-stratigraphic units. Fundamental data for sample point location include: subsurface lithology, head-differences and background geochemical conditions. Each sampling point has a proper use or uses which should be documented at a level which is appropriate for the program's data quality objectives. Individual sampling points may not always be able to fulfill multiple monitoring objectives (e.g., detection, assessment, corrective action).

1) Compatibility with Monitoring Program and Data Quality Objectives

Specifics of sampling point location and design will be dictated by the complexity of subsurface lithology and variability in contaminant and/or geochemical conditions. It should be noted that, regardless of the ground-water sampling approach, few sampling points (e.g., wells, drive-points, screened augers) have zones of influence in excess of a few

feet. Therefore, the spatial frequency of sampling points should be carefully selected and designed.

2) Flexibility of Sampling Point Design

In most cases *well-point* diameters in excess of 1 7/8 inches will permit the use of most types of submersible pumping devices for low-flow (minimal drawdown) sampling. It is suggested that *short* (e.g., less than 1.6 m) screens be incorporated into the monitoring design where possible so that comparable results from one device to another might be expected. *Short*, of course, is relative to the degree of vertical water quality variability expected at a site.

3) Equilibration of Sampling Point

Time should be allowed for equilibration of the well or sampling point with the formation after installation. Placement of well or sampling points in the subsurface produces some disturbance of ambient conditions. Drilling techniques (e.g., auger, rotary, etc.) are generally considered to cause more disturbance than *direct-push* technologies. In either case, there may be a period (i.e., days to months) during which water quality near the point may be distinctly different from that in the formation. Proper development of the sampling point and adjacent formation to remove fines created during emplacement will shorten this water quality *recovery* period.

III. Definition of Low-Flow Purging and Sampling

It is generally accepted that water in the well casing is non-representative of the formation water and needs to be purged prior to collection of ground-water samples. However, the water in the screened interval may indeed be representative of the formation, depending upon well construction and site hydrogeology. Wells are purged to some extent for the following reasons: the presence of the air interface at the top of the water column resulting in an oxygen concentration gradient with depth, loss of volatiles up the water column, leaching from or sorption to the casing or filter pack, chemical changes due to clay seals or backfill, and surface infiltration.

Low-flow purging, whether using portable or dedicated systems, should be done using pump-intake located in the middle or slightly above the middle of the screened interval. Placement of the pump too close to the bottom of the well will cause increased entrainment of solids which have collected in the well over time. These particles are present as a result of well development, prior purging and sampling events, and natural colloidal transport and deposition. Therefore, placement of the pump in the middle or toward the top of the screened interval is suggested. Placement of the pump at the top of the water column for sampling is only recommended in unconfined aquifers, screened across the water table, where this is the desired sampling point. Low-

flow purging has the advantage of minimizing mixing between the overlying stagnant casing water and water within the screened interval.

A. Low-Flow Purging and Sampling

Low-flow refers to the velocity with which water enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. It does not necessarily refer to the flow rate of water discharged at the surface which can be affected by flow regulators or restrictions. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system to the extent practical taking into account established site sampling objectives. Typically, flow rates on the order of 0.1 - 0.5 L/min are used, however this is dependent on site-specific hydrogeology. Some extremely coarse-textured formations have been successfully sampled in this manner at flow rates to 1 L/min. The effectiveness of using low-flow purging is intimately linked with proper screen location, screen length, and well construction and development techniques. The reestablishment of natural flow paths in both the vertical and horizontal directions is important for correct interpretation of the data. For high resolution sampling needs, screens less than 1 m should be used. Most of the need for purging has been found to be due to passing the sampling device through the overlying casing water which causes mixing of these stagnant waters and the dynamic waters within the screened interval. Additionally, there is disturbance to suspended sediment collected in the bottom of the casing and the displacement of water out into the formation immediately adjacent to the well screen. These disturbances and impacts can be avoided using dedicated sampling equipment, which precludes the need to insert the sampling device prior to purging and sampling.

Isolation of the screened interval water from the overlying stagnant casing water may be accomplished using low-flow minimal drawdown techniques. If the pump intake is located within the screened interval, most of the water pumped will be drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone. However, if the wells are not constructed and developed properly, zones other than those intended may be sampled. At some sites where geologic heterogeneities are sufficiently different within the screened interval, higher conductivity zones may be preferentially sampled. This is another reason to use shorter screened intervals, especially where high spatial resolution is a sampling objective.

B. Water Quality Indicator Parameters

It is recommended that water quality indicator parameters be used to determine purging needs prior to sample collection in each well. Stabilization of parameters such as pH, specific conductance, dissolved oxygen, oxida-

tion-reduction potential, temperature and turbidity should be used to determine when formation water is accessed during purging. In general, the order of stabilization is pH, temperature, and specific conductance, followed by oxidation-reduction potential, dissolved oxygen and turbidity. Temperature and pH, while commonly used as purging indicators, are actually quite insensitive in distinguishing between formation water and stagnant casing water; nevertheless, these are important parameters for data interpretation purposes and should also be measured. Performance criteria for determination of stabilization should be based on water-level drawdown, pumping rate and equipment specifications for measuring indicator parameters. Instruments are available which utilize in-line flow cells to continuously measure the above parameters.

It is important to establish specific well stabilization criteria and then consistently follow the same methods thereafter, particularly with respect to drawdown, flow rate and sampling device. Generally, the time or purge volume required for parameter stabilization is independent of well depth or well volumes. Dependent variables are well diameter, sampling device, hydrogeochemistry, pump flow rate, and whether the devices are used in a portable or dedicated manner. If the sampling device is already in place (i.e., dedicated sampling systems), then the time and purge volume needed for stabilization is much shorter. Other advantages of dedicated equipment include less purge water for waste disposal, much less decontamination of equipment, less time spent in preparation of sampling as well as time in the field, and more consistency in the sampling approach which probably will translate into less variability in sampling results. The use of dedicated equipment is strongly recommended at wells which will undergo routine sampling over time.

If parameter stabilization criteria are too stringent, then minor oscillations in indicator parameters may cause purging operations to become unnecessarily protracted. It should also be noted that turbidity is a very conservative parameter in terms of stabilization. Turbidity is always the last parameter to stabilize. Excessive purge times are invariably related to the establishment of too stringent turbidity stabilization criteria. It should be noted that natural turbidity levels in ground water may exceed 10 nephelometric turbidity units (NTU).

C. Advantages and Disadvantages of Low-Flow (Minimum Drawdown) Purging

In general, the advantages of low-flow purging include:

- samples which are representative of the *mobile* load of contaminants present (dissolved and colloid-associated);
- minimal disturbance of the sampling point thereby minimizing sampling artifacts;
- less operator variability, greater operator control;

- reduced stress on the formation (minimal drawdown);
- less mixing of stagnant casing water with formation water;
- reduced need for filtration and, therefore, less time required for sampling;
- smaller purging volume which decreases waste disposal costs and sampling time;
- better sample consistency; reduced artificial sample variability.

Some disadvantages of low-flow purging are:

- higher initial capital costs,
- greater set-up time in the field,
- need to transport additional equipment to and from the site,
- increased training needs,
- resistance to change on the part of sampling practitioners,
- concern that new data will indicate a *change in conditions* and trigger an *action*.

IV. Low-Flow (Minimal Drawdown) Sampling Protocols

The following ground-water sampling procedure has evolved over many years of experience in ground-water sampling for organic and inorganic compound determinations and as such summarizes the authors' (and others) experiences to date (Barcelona et al., 1984, 1994; Barcelona and Helfrich, 1986; Puls and Barcelona, 1989; Puls et. al. 1990, 1992; Puls and Powell, 1992; Puls and Paul, 1995). High-quality chemical data collection is essential in ground-water monitoring and site characterization. The primary limitations to the collection of *representative* ground-water samples include: mixing of the stagnant casing and *fresh* screen waters during insertion of the sampling device or ground-water level measurement device; disturbance and resuspension of settled solids at the bottom of the well when using high pumping rates or raising and lowering a pump or bailer; introduction of atmospheric gases or degassing from the water during sample handling and transfer, or inappropriate use of vacuum sampling device, etc.

A. Sampling Recommendations

Water samples should not be taken immediately following well development. Sufficient time should be allowed for the ground-water flow regime in the vicinity of the monitoring well to stabilize and to approach chemical equilibrium with the well construction materials. This lag time will depend on site conditions and methods of installation but often exceeds one week.

Well purging is nearly always necessary to obtain samples of water flowing through the geologic formations in the screened interval. Rather than using a general but arbitrary guideline of purging three casing volumes prior to

sampling, it is recommended that an in-line water quality measurement device (e.g., flow-through cell) be used to establish the stabilization time for several parameters (e.g., pH, specific conductance, redox, dissolved oxygen, turbidity) on a well-specific basis. Data on pumping rate, drawdown, and volume required for parameter stabilization can be used as a guide for conducting subsequent sampling activities.

The following are recommendations to be considered before, during and after sampling:

- use low-flow rates (<0.5 L/min), during both purging and sampling to maintain minimal drawdown in the well;
- maximize tubing wall thickness, minimize tubing length;
- place the sampling device intake at the desired sampling point;
- minimize disturbances of the stagnant water column above the screened interval during water level measurement and sampling device insertion;
- make proper adjustments to stabilize the flow rate as soon as possible;
- monitor water quality indicators during purging;
- collect unfiltered samples to estimate contaminant loading and transport potential in the subsurface system.

B. Equipment Calibration

Prior to sampling, all sampling device and monitoring equipment should be calibrated according to manufacturer's recommendations and the site Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP). Calibration of pH should be performed with at least two buffers which bracket the expected range. Dissolved oxygen calibration must be corrected for local barometric pressure readings and elevation.

C. Water Level Measurement and Monitoring

It is recommended that a device be used which will least disturb the water surface in the casing. Well depth should be obtained from the well logs. Measuring to the bottom of the well casing will only cause resuspension of settled solids from the formation and require longer purging times for turbidity equilibration. Measure well depth after sampling is completed. The water level measurement should be taken from a permanent reference point which is surveyed relative to ground elevation.

D. Pump Type

The use of low-flow (e.g., 0.1-0.5 L/min) pumps is suggested for purging and sampling all types of analytes. All pumps have some limitation and these should be investigated with respect to application at a particular site. Bailers are inappropriate devices for low-flow sampling.

1) General Considerations

There are no unusual requirements for ground-water sampling devices when using low-flow, minimal drawdown techniques. The major concern is that the device give consistent results and minimal disturbance of the sample across a range of *low* flow rates (i.e., < 0.5 L/min). Clearly, pumping rates that cause minimal to no drawdown in one well could easily cause *significant* drawdown in another well finished in a less transmissive formation. In this sense, the pump should not cause undue pressure or temperature changes or physical disturbance on the water sample over a reasonable sampling range. Consistency in operation is critical to meet accuracy and precision goals.

2) Advantages and Disadvantages of Sampling Devices

A variety of sampling devices are available for low-flow (minimal drawdown) purging and sampling and include peristaltic pumps, bladder pumps, electrical submersible pumps, and gas-driven pumps. Devices which lend themselves to both dedication and consistent operation at definable low-flow rates are preferred. It is desirable that the pump be easily adjustable and operate reliably at these lower flow rates. The peristaltic pump is limited to shallow applications and can cause degassing resulting in alteration of pH, alkalinity, and some volatiles loss. Gas-driven pumps should be of a type that does not allow the gas to be in direct contact with the sampled fluid.

Clearly, bailers and other *grab* type samplers are ill-suited for low-flow sampling since they will cause repeated disturbance and mixing of *stagnant* water in the casing and the *dynamic* water in the screened interval. Similarly, the use of inertial lift foot-valve type samplers may cause too much disturbance at the point of sampling. Use of these devices also tends to introduce uncontrolled and unacceptable operator variability.

Summaries of advantages and disadvantages of various sampling devices are listed in Herzog et al. (1991), U. S. EPA (1992), Parker (1994) and Thurnblad (1994).

E. Pump Installation

Dedicated sampling devices (left in the well) capable of pumping and sampling are preferred over any other type of device. Any portable sampling device should be slowly and carefully lowered to the middle of the screened interval or slightly above the middle (e.g., 1-1.5 m below the top of a 3 m screen). This is to minimize excessive mixing of the stagnant water in the casing above the screen with the screened interval zone water, and to minimize resuspension of solids which will have collected at the bottom of the well. These two disturbance effects have been shown to directly affect the time required for purging. There also appears to be a direct correlation between size of portable sampling devices relative to the well bore and resulting purge volumes and times. The key is to minimize disturbance of water and solids in the well casing.

F. Filtration

Decisions to filter samples should be dictated by sampling objectives rather than as a *fix* for poor sampling practices, and field-filtering of certain constituents should not be the default. Consideration should be given as to what the application of field-filtration is trying to accomplish. For assessment of truly dissolved (as opposed to operationally *dissolved* [i.e., samples filtered with 0.45 µm filters]) concentrations of major ions and trace metals, 0.1 µm filters are recommended although 0.45 µm filters are normally used for most regulatory programs. Alkalinity samples must also be filtered if significant particulate calcium carbonate is suspected, since this material is likely to impact alkalinity titration results (although filtration itself may alter the CO₂ composition of the sample and, therefore, affect the results).

Although filtration may be appropriate, filtration of a sample may cause a number of unintended changes to occur (e.g. oxidation, aeration) possibly leading to filtration-induced artifacts during sample analysis and uncertainty in the results. Some of these unintended changes may be unavoidable but the factors leading to them must be recognized. Deleterious effects can be minimized by consistent application of certain filtration guidelines. Guidelines should address selection of filter type, media, pore size, etc. in order to identify and minimize potential sources of uncertainty when filtering samples.

In-line filtration is recommended because it provides better consistency through less sample handling, and minimizes sample exposure to the atmosphere. In-line filters are available in both disposable (barrel filters) and non-disposable (in-line filter holder, flat membrane filters) formats and various filter pore sizes (0.1-5.0 µm). Disposable filter cartridges have the advantage of greater sediment handling capacity when compared to traditional membrane filters. Filters must be pre-rinsed following manufacturer's recommendations. If there are no recommendations for rinsing, pass through a minimum of 1 L of ground water following purging and prior to sampling. Once filtration has begun, a filter cake may develop as particles larger than the pore size accumulate on the filter membrane. The result is that the effective pore diameter of the membrane is reduced and particles smaller than the stated pore size are excluded from the filtrate. Possible corrective measures include prefiltering (with larger pore size filters), minimizing particle loads to begin with, and reducing sample volume.

G. Monitoring of Water Level and Water Quality Indicator Parameters

Check water level periodically to monitor drawdown in the well as a guide to flow rate adjustment. The goal is minimal drawdown (<0.1 m) during purging. This goal may be difficult to achieve under some circumstances due to geologic heterogeneities within the screened interval, and may require adjustment based on site-specific conditions and personal experience. In-line water quality indicator parameters should be continuously monitored during purging. The water quality

indicator parameters monitored can include pH, redox potential, conductivity, dissolved oxygen (DO) and turbidity. The last three parameters are often most sensitive. Pumping rate, drawdown, and the time or volume required to obtain stabilization of parameter readings can be used as a future guide to purge the well. Measurements should be taken every three to five minutes if the above suggested rates are used. Stabilization is achieved after all parameters have stabilized for three successive readings. In lieu of measuring all five parameters, a minimum subset would include pH, conductivity, and turbidity or DO. Three successive readings should be within ± 0.1 for pH, $\pm 3\%$ for conductivity, ± 10 mv for redox potential, and $\pm 10\%$ for turbidity and DO. Stabilized purge indicator parameter trends are generally obvious and follow either an exponential or asymptotic change to stable values during purging. Dissolved oxygen and turbidity usually require the longest time for stabilization. The above stabilization guidelines are provided for rough estimates based on experience.

H. Sampling, Sample Containers, Preservation and Decontamination

Upon parameter stabilization, sampling can be initiated. If an in-line device is used to monitor water quality parameters, it should be disconnected or bypassed during sample collection. Sampling flow rate may remain at established purge rate or may be adjusted slightly to minimize aeration, bubble formation, turbulent filling of sample bottles, or loss of volatiles due to extended residence time in tubing. Typically, flow rates less than 0.5 L/min are appropriate. The same device should be used for sampling as was used for purging. Sampling should occur in a progression from least to most contaminated well, if this is known. Generally, volatile (e.g., solvents and fuel constituents) and gas sensitive (e.g., Fe^{2+} , CH_4 , $\text{H}_2\text{S}/\text{HS}^-$; alkalinity) parameters should be sampled first. The sequence in which samples for most inorganic parameters are collected is immaterial unless filtered (dissolved) samples are desired. Filtering should be done last and in-line filters should be used as discussed above. During both well purging and sampling, proper protective clothing and equipment must be used based upon the type and level of contaminants present.

The appropriate sample container will be prepared in advance of actual sample collection for the analytes of interest and include sample preservative where necessary. Water samples should be collected directly into this container from the pump tubing.

Immediately after a sample bottle has been filled, it must be preserved as specified in the site (QAPP). Sample preservation requirements are based on the analyses being performed (use site QAPP, FSP, RCRA guidance document [U. S. EPA, 1992] or EPA SW-846 [U. S. EPA, 1982]). It may be advisable to add preservatives to sample bottles in a controlled setting prior to entering the field in order to reduce the chances of improperly preserving sample bottles or

introducing field contaminants into a sample bottle while adding the preservatives.

The preservatives should be transferred from the chemical bottle to the sample container using a disposable polyethylene pipet and the disposable pipet should be used only once and then discarded.

After a sample container has been filled with ground water, a Teflon™ (or tin)-lined cap is screwed on tightly to prevent the container from leaking. A sample label is filled out as specified in the FSP. The samples should be stored inverted at 4°C.

Specific decontamination protocols for sampling devices are dependent to some extent on the type of device used and the type of contaminants encountered. Refer to the site QAPP and FSP for specific requirements.

I. Blanks

The following blanks should be collected:

- (1) field blank: one field blank should be collected from each source water (distilled/deionized water) used for sampling equipment decontamination or for assisting well development procedures.
- (2) equipment blank: one equipment blank should be taken prior to the commencement of field work, from each set of sampling equipment to be used for that day. Refer to site QAPP or FSP for specific requirements.
- (3) trip blank: a trip blank is required to accompany each volatile sample shipment. These blanks are prepared in the laboratory by filling a 40-mL volatile organic analysis (VOA) bottle with distilled/deionized water.

V. Low-Permeability Formations and Fractured Rock

The overall sampling program goals or sampling objectives will drive how the sampling points are located, installed, and choice of sampling device. Likewise, site-specific hydrogeologic factors will affect these decisions. Sites with very low permeability formations or fractures causing discrete flow channels may require a unique monitoring approach. Unlike water supply wells, wells installed for ground-water quality assessment and restoration programs are often installed in low water-yielding settings (e.g., clays, silts). Alternative types of sampling points and sampling methods are often needed in these types of environments, because low-permeability settings may require extremely low-flow purging (<0.1 L/min) and may be technology-limited. Where devices are not readily available to pump at such low flow rates, the primary consideration is to avoid dewatering of

the well screen. This may require repeated recovery of the water during purging while leaving the pump in place within the well screen.

Use of low-flow techniques may be impractical in these settings, depending upon the water recharge rates. The sampler and the end-user of data collected from such wells need to understand the limitations of the data collected; i.e., a strong potential for underestimation of actual contaminant concentrations for volatile organics, potential false negatives for filtered metals and potential false positives for unfiltered metals. It is suggested that comparisons be made between samples recovered using low-flow purging techniques and samples recovered using passive sampling techniques (i.e., two sets of samples). Passive sample collection would essentially entail acquisition of the sample with no or very little purging using a dedicated sampling system installed within the screened interval or a passive sample collection device.

A. Low-Permeability Formations (<0.1 L/min recharge)

1. Low-Flow Purging and Sampling with Pumps

- a. "portable or non-dedicated mode" - Lower the pump (one capable of pumping at <0.1 L/min) to mid-screen or slightly above and set in place for minimum of 48 hours (to lessen purge volume requirements). After 48 hours, use procedures listed in Part IV above regarding monitoring water quality parameters for stabilization, etc., but do not dewater the screen. If excessive drawdown and slow recovery is a problem, then alternate approaches such as those listed below may be better.
- b. "dedicated mode" - Set the pump as above at least a week prior to sampling; that is, operate in a dedicated pump mode. With this approach significant reductions in purge volume should be realized. Water quality parameters should stabilize quite rapidly due to less disturbance of the sampling zone.

2. Passive Sample Collection

Passive sampling collection requires insertion of the device into the screened interval for a sufficient time period to allow flow and sample equilibration before extraction for analysis. Conceptually, the extraction of water from low yielding formations seems more akin to the collection of water from the unsaturated zone and passive sampling techniques may be more appropriate in terms of obtaining "representative" samples. Satisfying usual sample volume requirements is typically a problem with this approach and some latitude will be needed on the part of regulatory entities to achieve sampling objectives.

B. Fractured Rock

In fractured rock formations, a low-flow to zero purging approach using pumps in conjunction with packers to isolate the sampling zone in the borehole is suggested. Passive multi-layer sampling devices may also provide the most "representative" samples. It is imperative in these settings to identify flow paths or water-producing fractures prior to sampling using tools such as borehole flowmeters and/or other geophysical tools.

After identification of water-bearing fractures, install packer(s) and pump assembly for sample collection using low-flow sampling in "dedicated mode" or use a passive sampling device which can isolate the identified water-bearing fractures.

VI. Documentation

The usual practices for documenting the sampling event should be used for low-flow purging and sampling techniques. This should include, at a minimum: information on the conduct of purging operations (flow-rate, drawdown, water-quality parameter values, volumes extracted and times for measurements), field instrument calibration data, water sampling forms and chain of custody forms. See Figures 2 and 3 and "Ground Water Sampling Workshop -- A Workshop Summary" (U. S. EPA, 1995) for example forms and other documentation suggestions and information. This information coupled with laboratory analytical data and validation data are needed to judge the "useability" of the sampling data.

VII. Notice

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Project _____ Site _____ Well No. _____ Date _____

Well Depth _____ Screen Length _____ Well Diameter _____ Casing Type _____

Sampling Device _____ Tubing type _____ Water Level _____

Measuring Point _____ Other Infor _____

Sampling Personnel _____

[illegible]

Information: 2 in = 617 ml/ft, 4 in = 2470 ml/ft: $\text{Vol}_{\text{cyl}} = \pi r^2 h$, $\text{Vol}_{\text{sphere}} = 4/3 \pi r^3$

Project _____ Site _____ Well No. _____ Date _____
Well Depth _____ Screen Length _____ Well Diameter _____ Casing Type _____
Sampling Device _____ Tubing type _____ Water Level _____
Measuring Point _____ Other Infor _____

Sampling Personnel _____

[illegible]

Information: 2 in = 617 ml/ft, 4 in = 2470 ml/ft: $\text{Vol}_{\text{cyl}} = \pi r^2 h$, $\text{Vol}_{\text{sphere}} = 4/3 \pi r^3$

SOP	1001.01				
GROUP	Sampling Procedures				
SUB-GROUP	Soil Sampling Procedures				
TITLE	Surface Soil Sampling				
DATE	11/19/2001	FILE	1001-01.DOC	PAGE	1 of 3

INTRODUCTION

The following Standard Operating Procedure (SOP) is to describe the procedures for collecting representative soil samples. Analysis of soil samples may determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of soil pollutants present a risk to public health, welfare, or the environment. This SOP is similar to SOP Number 1001.03 for collecting near surface soil samples with a hand auger.

PROCEDURE

Surface soil samples may be collected using a variety of methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed versus undisturbed), and the type of soil. Near-surface soils may be easily sampled using a spade, trowel, or hand scoop.

Sample Preservation

Cooling to $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, supplemented by a minimal holding time, is suggested.

Interferences and Potential Problems

There are two primary interferences or potential problems associated with soil sampling: cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated (disposable) sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results. Homogenization may also affect sample representativeness where the analytical requirements include volatile organic compounds.

Equipment or Apparatus

The equipment used for sampling may be selected from the following list, as appropriate:

- Tape measure
- Survey stakes or flags
- Stainless steel, plastic, or other appropriate homogenization bucket or bowl
- Ziploc plastic bags
- Logbook
- Labels
- Chain-of-custody forms and seals
- Coolers
- Ice
- Decontamination supplies and equipment
- Canvas or plastic sheet
- Spatulas/spades/shovels
- Scoops

SOP	1001.01				
GROUP	Sampling Procedures				
SUB-GROUP	Soil Sampling Procedures				
TITLE	Surface Soil Sampling				
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- Plastic or stainless steel spoons
- Trowel

Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and what equipment and supplies are required.
2. Obtain necessary sampling and monitoring equipment from the list above.
3. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.
4. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.
5. Decontaminate or preclean equipment, and ensure that it is in working order.
6. Use stakes, buoys, or flagging to identify and mark all sampling locations. Consider specific site factors, including extent and nature of contaminant, when selecting sample locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations will be utility-cleared by the property owner or other responsible party prior to soil sampling.
7. Evaluate safety concerns associated with sampling that may require use of personal protective equipment and/or air monitoring.

Surface Soil Sample Collection

Collect samples from the near-surface soil with tools such as spades, shovels, and scoops. Surface material can be removed to the required depth with this equipment, then a stainless steel or plastic scoop can be used to collect the sample. The use of a flat, pointed mason trowel to cut a block of the desired soil can be helpful when undisturbed profiles are required. A stainless steel scoop, lab spoon, or plastic spoon will suffice in most other applications. Avoid the use of devices plated with chrome or other target analyte materials.

The following procedures should be followed when collecting surface soil samples:

1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.
2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.
3. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or if composite samples are to be collected, place a sample from another sampling interval into the

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homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled container(s) and secure the cap(s) tightly.

4. Fill hole created through sampling with unused material or other appropriate backfill material (sand).
5. Record applicable information into field log book or appropriate forms as documentation of sampling.

SOP	1002.01				
GROUP	Sampling Procedures				
SUB-GROUP	Surface Water				
TITLE	Surface Water Sampling				
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INTRODUCTION

The following Standard Operating Procedure (SOP) is to describe the procedures for collecting representative surface water samples. Analysis of surface samples may determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of pollutants present a risk to public health, welfare, or the environment.

PROCEDURE

Surface water samples may be collected using a variety of methods and equipment. The methods and equipment used are usually dependent on the location of the body of water being sampled. Sampling can be performed by merely submerging the sample container, a weighted-bottle sampler with stopper, a bailer, or by pump assisted methods. Several types of pumps can be used for sampling depending on the objectives of sampling and the site conditions.

Sample Preservation

Samples are to be preserved in conformance with the site-specific Quality Assurance Project Plan, Sampling and Analysis Plan or work plan. In general these requirements include refrigeration to 4°C, addition of appropriate additives (HCl, H₂SO₄, NaOH) to adjust and fix pH, and a defined maximum holding time. If a site-specific plan is not available, the analytical laboratory should be consulted for the appropriate preservation procedures.

Interferences and Potential Problems

There are two primary interferences or potential problems associated with surface water sampling: cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, undue disturbance of the sample matrix, or improper sample location.

Equipment or Apparatus

- Ziploc plastic bags
- Logbook
- Labels
- Chain-of-custody forms and seals
- Coolers
- Ice
- Decontamination supplies and equipment
- Discharge tubing
- Sample containers
- Sampling devices

SOP	1002.01				
GROUP	Sampling Procedures				
SUB-GROUP	Surface Water				
TITLE	Surface Water Sampling				
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Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and which equipment and supplies are required.
2. Obtain necessary sampling and monitoring equipment.
3. Decontaminate or preclean equipment, and ensure that it is in working order.
4. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.
5. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.

Surface Water Sampling

Samples from shallow depths can be readily collected by merely submerging the sample container. In flowing surface water bodies, the container's mouth should be positioned so that it faces upstream, while the sampling personnel stand downstream so as not to stir up sediment that could potentially contaminate the sample.

Collecting a representative sample from a larger body of surface water requires that samples be collected near the shore unless boats are feasible and permitted. If boats are used, the body of water should be cross sectioned, and samples should be collected at various depths across the body of water in accordance with the specified sampling plan. For this type of sampling, a weighted-bottle sampler is used to collect samples at a predetermined depth. The sampler consists of a glass bottle, a weighted sinker, a bottle stopper, and a line that is used to open the bottle and to lower and raise the sampler during sampling. The procedure for use is as follows:

- Assemble the weighted bottle sampler.
- Gently lower the sampler to the desired depth so as not to remove the stopper prematurely.
- Pull out the stopper with a sharp jerk of the sampler line.
- Allow the bottle to fill completely, as evidenced by the cessation of air bubbles.
- Raise the sampler and cap the bottle.
- Wipe the bottle clean. The sampling bottle can be also be used as the sample container for shipping.

Teflon bailers have also been used where feasible for collecting samples in deep bodies of water.

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GROUP	Sampling Procedures				
SUB-GROUP	Surface Water				
TITLE	Surface Water Sampling				
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Another method of extending the reach of sampling efforts is the use of a small peristaltic pump. In this method the sample is drawn through heavy-wall Teflon tubing and pumped directly into the sample container. This system allows the operator to reach into the liquid body, sample from depth, or sweep the width of narrow streams.

The general sampling procedures are listed below:

1. Collect the sample using whichever technique, submerged bottle, bottle sampler with stopper, pump & tubing, or bailer.
2. The collected sample may be collected in the sample containers or may be transferred to the appropriate sample containers in order of the volatile organics first and inorganics last.
3. Label sample containers, place on ice in a cooler, remove, and decontaminate equipment as necessary.

REFERENCES

SOP 0110.01 Sample Nomenclature
SOP 1005.01 Field Duplicate Collection
SOP 1005.02 Rinse Blank Preparation
SOP 1005.03 Field Blank Preparation
SOP 1101.01 Sample Custody - Field
SOP 1102.01 Sample Shipping
SOP 1201.01 Sampling Equipment Decontamination
SOP 1501.01 Field Logbook

SOP	1002.04				
GROUP	Sampling Procedures				
SUB-GROUP	Soil Sampling Procedures				
TITLE	Sediment Sampling				
DATE	2/6/2009	FILE	1002-04.DOC	PAGE	1 of 3

INTRODUCTION

The following Standard Operating Procedure (SOP) is to describe the procedures for collecting representative sediment samples using a trowel, piston corer, WILDCO KB Core Sampler, a Ponar Grab Sampler, or other similar equipment. Analysis of sediment samples may be performed to determine whether concentrations of specific sediment pollutants exceed established action levels, or if the concentrations of sediment pollutants present a risk to public health, welfare, or the environment.

PROCEDURE

Overview

Sediment samples may be collected using trowels, core and Ponar sampler, or a variety of similar methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed versus undisturbed), and the type of sediment (fines versus coarse). Sampling in shallow areas or streams near the surface may only require a hand trowel, while sampling at depth may be performed using a core or Ponar sampler.

Sample Preservation

Refrigeration to $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, supplemented by a minimal holding time, is suggested.

Interferences and Potential Problems

There are two primary interferences or potential problems associated with sediment sampling: cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated (disposable) sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in mixing of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results. Homogenization may also affect sample representativeness when the analytical requirements include volatile organic compounds.

Equipment or Apparatus

The equipment selected for the sampling effort may include the following as appropriate:

- Tape measure
- Survey stakes or flags
- Stainless steel, plastic, or other appropriate homogenization bucket or bowl
- Ziploc plastic bags
- Logbook
- Labels
- Chain-of-custody forms and seals
- Coolers
- Ice

SOP	1002.04				
GROUP	Sampling Procedures				
SUB-GROUP	Soil Sampling Procedures				
TITLE	Sediment Sampling				
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- Decontamination supplies and equipment (i.e. brushes and buckets)
- Canvas or plastic sheeting
- Spatulas
- Scoops
- Plastic or stainless steel spoons
- Trowel
- Auger bucket
- Extension rods
- T-handle
- KB Core Sampler
- Ponar Grab Sampler
- Air monitor

Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and which equipment and supplies are required.
2. Obtain necessary sampling and monitoring equipment from the list above. Additional equipment may be added to this list as appropriate to perform other sampling.
3. Decontaminate or preclean equipment, and ensure that it is in working order.
4. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.
5. Use stakes, buoys, or flagging to identify and mark all sampling locations. Consider specific site factors, including extent and nature of contaminant, when selecting sample locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and obstructions.

Sediment Sampling in Shallow Waters

The following procedures should be used when collecting sediment samples in shallow waters:

1. Collect sediments as specified in the work plan or as determined during office preparation activities, using a stainless steel trowel, piston corer or similar device and a stainless steel, tempered glass or aluminum container.
2. Standing downstream of the sample stations, collect discrete sediment samples from each station and, if required in the work plan, composite in stainless steel, tempered glass or aluminum container.
3. Collect sediment samples of deposited material from the depth specified in the work plan or as determined during the office preparation activities. Record the depth in the logbook. Selective removal of the top sediment layers may be required and should be accomplished by carefully removing the sediments with a stainless steel trowel or scoop. In streams where water velocity is insufficient to disturb sediment fines during sediment sampling, a stainless

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GROUP	Sampling Procedures				
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steel trowel or scoop may be used for sampling. Where water velocities are high, a stainless steel corer will be utilized.

4. When applicable, composite discrete sediment samples by placing equal volumes of sediment material collected from the sample points into the container and mixing thoroughly to obtain a homogeneous mixture. Samples may be sieved or hand picked, if necessary, to remove larger materials, such as leaves, sticks, gravel, or rocks. Record in the logbook the nature of any materials removed from the sediment samples.
5. Place each sediment sample into the proper clean, unused sample container, as required by the work plan or laboratory. Sampling personnel must avoid placing sediment into the sample container and decanting off the excess liquid in analyzing for volatile organics and water soluble compounds in the sediment and reduces accurate representation of sediment analysis.
6. Fill out labels with waterproof ink and attach to the sample container.
7. Decontaminate sampling equipment between samples.

Sediment Sampling in Deep Waters

Procedures for sampling in deep waters are the same as for shallow waters except the sampling equipment is different. Soft, fine-grained sediments collected in deep waters will be sampled with a WILDCO KB Core Sampler or similar equipment. Coarse-grained sediments will be collected utilizing a Ponar Grab Sampler or similar equipment. Both samplers will be operated from a boat following appropriate safety procedures. Documentation, containerization, labeling and decontamination procedures are the same as for sediment samples collected in shallow waters.

Sediment Sampling in Drainage Ditches and Intermittent Streams

Procedures for sediment sampling in drainage ditches and the dry portions of intermittent streams are as specified for shallow water sediments.

SOP	1005.01				
GROUP	Sampling Procedures				
SUB-GROUP	Field QA/QC Sampling				
TITLE	Field Duplicate Collection				
DATE	4/27/2005	FILE	1005-01.DOC	PAGE	1 of 2

INTRODUCTION

The following Standard Operating Procedure (SOP) describes the procedure for collecting field duplicate soil and water samples. When samples are collected for analysis, it is typically desired that independent data allowing evaluation of laboratory precision (i.e., the degree to which a laboratory result can be repeated) on site-specific samples be collected.

A field duplicate sample is a second sample collected at the same location as the original sample. Duplicate samples are collected simultaneously or in immediate succession, using identical recovery techniques, and treated in an identical manner during storage, transportation, and analysis. The sample containers are assigned an identification number in the field such that they cannot be identified (blind duplicate) as duplicated samples by laboratory personnel performing the analysis. Specific locations are designated for collection of field duplicate samples prior to the beginning of sample collection.

The duplicate soil sampling procedure is closely related to SOP Nos. 1001.01, 1001.03, and 1001.10 regarding soil sampling procedures. This procedure serves as an alternative method or extension of sample preparation prior to placing the samples in containers, as described in the 1001 series of the SOPs (e.g. 1001.01 and 1001.03).

DUPLICATE SOIL SAMPLING PROCEDURE

The procedure to be used to physically collect soil samples are described in SOP Nos. 1001.01 and 1001.03. Reference should be made to these SOPs for specific sampling equipment, procedures, and other general guidelines. As soil is collected, the following procedure will be used to prepare a field duplicate sample:

- The soil will be collected in general accordance with SOP 1001.01 or 1001.03, with the exception that samples will generally not be immediately placed into sample containers and an additional preparation step (i.e., sample splitting) will be performed.
- As they are collected, soil samples to be submitted as field duplicates will be staged in a clean mixing bowl or mixing bucket.
- For samples that will be analyzed for volatile organic compounds, the soil sample will be split in half and an equal portion of soil will be placed directly into two or more different sample containers, each container representing a different sample for laboratory analysis. The soil will not be homogenized to minimize the potential for volatilization of the organic compounds potentially in the sample.
- For analyses of chemicals other than volatile organic compounds, the soil removed from the discrete sample location will be homogenized in a clean mixing bowl using a clean scoop or spatula (as described in SOPs 1001.01 and 1001.03). Homogenization will generally continue until the discrete samples being combined are reasonably indistinguishable as individual samples in the soil mixture. However, it is recognized that homogenization can be difficult for highly plastic clays. In this case, equal amounts of the soil core of each clay sample will be cut into small, roughly cubical pieces using a stainless steel knife and placed into a bowl and homogenized to extent practical.

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GROUP	Sampling Procedures				
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TITLE	Field Duplicate Collection				
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- The field duplicate sample (except for volatiles as note above) will be collected from the mixing bowl containing the homogenized samples after homogenization is performed. The composited sample will be collected using a stainless steel or disposable plastic scoop or similar tool. The sample will be placed in a clean sample container and then handled in accordance with soil sampling SOPs 1001.01 and 1001.03.

Another difference from the referenced SOPs is that additional soil volume may need to be collected from a discrete sample location during the sampling process to provide sufficient sample volume for two or more sets of laboratory analyses. If the collection of additional sample volume will result in the sample interval expanding to greater depths or laterally outward, the sampling tools identified in 1001 series of the SOPs can be used at two immediately vertically or laterally adjacent locations, as appropriate. If sampling from two adjacent but distinct locations is necessary to obtain adequate sample volume, the soil from the two locations should be composited in accordance with SOP 1001.10. Field duplicates of composited samples may also be performed using this SOP for field duplicate samples.

Variations on this procedure are allowable to accommodate different soil conditions and any site requirements specifically identified in the site-specific Sampling and Analysis Plan. Equipment that may be used as part of the soil compositing procedure is identified under SOP Nos. 1001.01 and 1001.03 where soil sampling methods are described.

DUPLICATE WATER SAMPLING PROCEDURES

The procedure to be used to physically collect water samples are described in 1002 series of the SOPs (e.g. 1002.01 and 1002.02). Reference should be made to these SOPs for specific sampling equipment, procedures, and other general guidelines. A duplicate water sample will be collected from the same location as the parent sample and within 15 minutes of the collection of the parent sample.

The number of samples that may be submitted as blind field duplicates for the project in question will be specified in the site-specific sampling plan. Blind field duplicates are typically collected at a frequency of 1 per 10 samples of a given environmental media at sites, especially where laboratory analytical data will be used for evaluating regulatory compliance and other engineering judgments. Sampling in support of a routine monitoring program may not require field duplicates. Reference should be made to the site-specific contract and work plans.

REFERENCES

SOP No. 1001.01 - Standard Operating Procedure, Surface Soil Sampling
SOP No. 1001.03 - Standard Operating Procedure, Soil Sampling - Hand Auger Method
SOP No. 1001.10 - Standard Operating Procedure, Soil Compositing

SOP	1005.02				
GROUP	Sampling Procedures				
SUB-GROUP	Field QA/QC Sampling				
TITLE	Rinse Blank Preparation				
DATE	2/6/2009	FILE	1005-02.DOC	PAGE	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) presents a method to prepare a type of quality control sample specific to the field decontamination process, the equipment rinse blank. The rinse blank provides information on the effectiveness of the decontamination process employed in the field. When used in conjunction with field blanks and trip blanks, the rinse blank can be used to assist in evaluating possible compromise of samples from field related activities.

PROCEDURE

The equipment rinse blank is prepared by passing target analyte-free (i.e., deionized) water over and through a field decontaminated sampling device, then collecting the rinse water in appropriate clean sample containers. Rinse blanks will typically be collected from equipment that comes in contact with samples, such as auger buckets, split spoons, bailers, shelby tubes, and stainless steel spoons/trowels. The collected sample will be coded appropriately prior to logging and shipping. Equipment blanks are not required if dedicated sampling equipment is used. Equipment blanks will be collected periodically during the day immediately after decontamination of the sampling equipment being used.

The frequency for collecting equipment blanks will be determined prior to engaging in field activities, and communicated in site-specific quality assurance project plans, sampling and analyses plans, or a type of work plan. Equipment blanks will be collected at a rate relative to each type of sample collection procedure (i.e., surface sample, sample at depth using a hand auger). Equipment blanks will generally be collected at a frequency of 1 per 20 (normal) samples of a given matrix.

SOP	1101.01				
GROUP	Sampling Handling				
SUB-GROUP	Sample Custody				
TITLE	Sample Custody in the Field				
DATE	11/19/2001	FILE	1101-01.DOC	PAGE	1 of 4

INTRODUCTION

The following Standard Operating Procedure (SOP) presents procedures for maintaining sample chain of custody (COC) during activities where samples are collected.

PROCEDURE

Sample custody is defined as being under a person's custody if any of the following conditions exist:

- it is in their possession,
- it is in their view, after being in their possession,
- it was in their possession and they locked it up, or
- it is in a designated secure area.

A designated field sampler will be personally responsible for the care and custody of collected samples until they are transferred to another person or properly dispatched to the laboratory. To the extent practicable, as few people as possible will handle the samples.

Sample tags or labels will be completed and applied to the container of each sample. When the tags or labels are being completed, waterproof ink will be used. If waterproof ink is not used, the tags or labels will be covered by transparent waterproof tape. Sample containers may also be placed in Ziploc-type storage bags to help keep them clean in the cooler. Information typically included on the sample tags or labels will include the following:

- Project Code
- Station Number and Location
- Sample Identification Number
- Date and Time of Sample Collection
- Type of Laboratory Analysis Required
- Preservation Required, if applicable
- Collector's Signature
- Priority (optional)
- Other Remarks

Additional information may include:

- Anticipated Range of Results (Low, Medium, or High)
- Sample Analysis Priority

SOP	1101.01				
GROUP	Sampling Handling				
SUB-GROUP	Sample Custody				
TITLE	Sample Custody in the Field				
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A COC form will be completed each time a sample or group of samples is prepared for transfer to the laboratory. The form will repeat the information on each of the sample labels and will serve as documentation of handling during shipment. The minimum information requirements of the COC form are listed in Table 1101.01-A. An example COC form is shown in Figure 1101.01-A. The completed COC must be reviewed by the Field Team Leader or Site Manager prior to sample shipment. The COC form will remain each sample shipping container at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples or in a project file.

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GROUP	Sampling Handling				
SUB-GROUP	Sample Custody				
TITLE	Sample Custody in the Field				
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TABLE 1101.01-A CHAIN OF CUSTODY FORM

INFORMATION	COMPLETED BY	DESCRIPTION
COC	Laboratory	enter a unique number for each chain of custody form
SHIP TO	Field Team	enter the laboratory name and address
CARRIER	Field Team	enter the name of the transporter (e.g., FedEx) or handcarried
AIRBILL	Field Team	enter the airbill number or transporter tracking number (if applicable)
PROJECT NAME	Field Team	enter the project name
SAMPLER NAME	Field Team	enter the name of the person collecting the samples
SAMPLER SIGNATURE	Field Team	signature of the person collecting the samples
SEND RESULTS TO	Field Team	enter the name and address of the prime contractor
FIELD SAMPLE ID	Field Team	enter the unique identifying number given to the field sample (includes MS, MSD, field duplicate and field blanks)
DATE	Field Team	enter the year and date the sample was collected in the format M/D (e.g., 6/3)
TIME	Field Team	enter the time the sample was collected in 24 hour format (e.g., 0900)
MATRIX	Field Team	enter the sample matrix (e.g., water, soil)
PRESERVATIVE	Field Team	enter the preservative used (e.g., HNO3) or "none"
FILTERED/ UNFILTERED	Field Team	enter "F" if the sample was filtered or "U" if the sample was not filtered
CONTAINERS	Field Team	enter the number of containers associated with the sample
MS/MSD	Field Team or Laboratory	enter "X" if the sample is designated for the MS/MSD
ANALYSES REQUESTED	Field Team	enter the method name of the analysis requested (e.g., SW6010A)
COMMENTS	Field Team	enter comments
SAMPLE CONDITION UPON RECEIPT AT LABORATORY	Laboratory	enter any problems with the condition of any sample(s)
COOLER TEMPERATURE	Laboratory	enter the internal temperature of the cooler, in degrees C, upon opening
SPECIAL INSTRUCTIONS/COMMENTS	Laboratory	enter any special instructions or comments
RELEASED BY (SIG)	Field Team and Laboratory	enter the signature of the person releasing custody of the samples
COMPANY NAME	Field Team and Laboratory	enter the company name employing the person releasing/receiving custody
RECEIVED BY (SIG)	Field Team and Laboratory	enter the signature of the person receiving custody of the samples
DATE	Field Team and Laboratory	enter the date in the format M/D/YY (e.g., 6/3/96) when the samples were released/received
TIME	Field Team and Laboratory	enter the date in 24 hour format (e.g., 0900) when the samples were released/received

SOP	1101.01				
GROUP	Sampling Handling				
SUB-GROUP	Sample Custody				
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FIGURE 1101.01-A CHAIN OF CUSTODY FORM

SOP	1201.01				
GROUP	Decontamination				
SUB-GROUP	Sampling Equipment Decontamination				
TITLE	Sampling Equipment Decontamination				
DATE	11/19/2001	FILE	1201-01.DOC	PAGE	1 of 3

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the methods used for minimizing the potential for cross-contamination, and provides general guidelines for sampling equipment decontamination procedures.

PROCEDURE

As part of the Health and Safety Plan (HASP), develop and set up a decontamination plan before any personnel or equipment enter the areas of potential exposure. The decontamination plan should include the following:

- The number, location, and layout of decontamination stations
- Which decontamination apparatus is needed
- The appropriate decontamination methods
- Methods for disposal of contaminated clothing, apparatus, and solutions

Decontamination Methods

Personnel, samples, and equipment leaving the contaminated area of a site will be decontaminated. Various decontamination methods will be used to either physically remove contaminants, inactivate contaminants by disinfection or sterilization, or both. The physical decontamination techniques appropriate for equipment decontamination can be grouped into two categories: abrasive methods and non-abrasive methods.

Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing/scrubbing the surface containing the contaminant. This method includes mechanical and wet blasting methods.

Mechanical cleaning methods use brushes of metal or nylon. The amount and type of contaminants removed will vary with the hardness of bristles, length of brushing time, and degree of brush contact.

Cleaning can also be accomplished by water blasting which is also referred to as steam cleaning and pressure washing. Pressure washing utilizes high-pressure that is sprayed from a nozzle onto sampling equipment to physically remove soil or (potentially) contaminated material. Steam cleaning is a modification of pressure washing where the water is heated to temperatures approaching 100°C to assist in removing organic constituents from equipment.

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GROUP	Decontamination				
SUB-GROUP	Sampling Equipment Decontamination				
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Disinfection/Rinse Methods

Disinfectants are a practical means of inactivating chemicals or contaminants of concern. Standard sterilization methods involve heating the equipment which is impractical for large equipment. Rinsing removes contaminants through dilution, physical attraction, and solubilization.

The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be target analyte free. Tap water may be used from any municipal water treatment system for mixing of decontamination solutions. An untreated potable water supply is not an acceptable substitute for tap water. Acids and solvents are occasionally utilized in decontamination of equipment to remove metals and organics, respectively, from sampling equipment. Other than ethanol, these are avoided when possible due to the safety, disposal, and transportation concerns associated with them.

Equipment or apparatuses that may be selected for use include the following:

- Personal protective clothing
- Non-phosphate detergent
- Selected solvents for removal of polar and nonpolar organics (ethanol, methanol, hexane)
- Acid washes for removal of metals (nitric acid)
- Long-handled brushes
- Drop cloths or plastic sheeting
- Paper towels
- Galvanized tubs or buckets
- Distilled, deionized, or tap water (as required by the project)
- Storage containers for spent wash solutions
- Sprayers (pressurized and non-pressurized)
- Trash bags
- Safety glasses or splash shield

Field Sampling Equipment Cleaning Procedures

The following procedures should be followed:

1. Where applicable, follow physical removal procedures previously described (pressure wash, scrub wash)
2. Wash equipment with a non-phosphate detergent solution
3. Rinse with tap water
4. Rinse with distilled or deionized water
5. Rinse with 10% nitric acid if the sample will be analyzed for metals/organics
6. Rinse with distilled or deionized water
7. Use a solvent rinse (pesticide grade) if the sample will be analyzed for organics
8. Air dry the equipment completely
9. Rinse again with distilled or deionized water

SOP	1201.01				
GROUP	Decontamination				
SUB-GROUP	Sampling Equipment Decontamination				
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10. Place in clean bag or container for storage/transport to subsequent sampling locations.

Selection of the solvent for use in the decontamination process is based on the contaminants present at the site. Solvent rinses are not necessarily required when organics are not a contaminant of concern and may be eliminated from the sequence specified below. Similarly, an acid rinse is not required if the analyses do not include inorganics. Use of a solvent is required when organic contamination is present on-site. Typical solvents used for removal of organic contaminants include acetone, ethanol, hexane, methanol, or water. An acid rinse step is required if metals are present on-site. If a particular contaminant fraction is not present at the site, the ten-step decontamination procedure listed above may be modified for site specificity.

Sampling equipment that requires the use of plastic tubing should be disassembled and the tubing replaced with clean tubing before commencement of sampling and between sampling locations. Plastic tubing should not be reused.

SOP	1501.01				
GROUP	Field Documentation				
SUB-GROUP					
TITLE	Field Logbook				
DATE	11/19/2001	FILE	1501-01.DOC	PAGE	1 of 3

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the procedures for documenting activities observed or completed in the field in a field logbook. The documentation should represent all activities of WESTON personnel and entities under WESTON's supervision.

TERMS

FSP - Field Sampling Plan

SAP - Sampling and Analysis Plan

QAPP - Quality Assurance Project Plan

HASP - Health and Safety Plan

PROCEDURE

Field logbooks will be used and maintained during field activities to document pertinent information observed or completed by WESTON personnel or entities that WESTON is responsible for providing oversight. Field logbooks are legal documents that form the basis for later written reports and may serve as evidence in legal proceedings. The Site Manager or Field Team Leader will review field log entries daily and initial each page of entries. Field logbooks will be maintained by the Site Manager or Field Team Leader during field activities and transferred to the project files for a record of activities at the conclusion of the project. General logbook entry procedures are listed below.

- Logbooks must be permanently bound with all pages numbered to the end of the book. Entries should begin on page 1.
- Only use blue or black ink (waterproof) for logbook entries.
- Sign entries at the end of the day, or before someone else writes in the logbook.
- If a complete page is not used, draw a line diagonally across the blank portion of the page and initial and date the bottom line.
- If a line on the page is not completely filled, draw a horizontal line through the blank portion.
- Ensure that the logbook clearly shows the sequence of the day's events.
- Do not write in the margins or between written lines, and do not leave blank pages to fill in later.
- If an error is made, make corrections by drawing a single line through the error and initialing it.
- Maintain control of the logbook and keep in a secure location.

SOP	1501.01				
GROUP	Field Documentation				
SUB-GROUP					
TITLE	Field Logbook				
DATE	11/19/2001	FILE	1501-01.DOC	PAGE	2 of 3

Field logbooks will contain, at a minimum, the following information, if applicable:

General Information

- Name, location of site, and work order number
- Name of the Site Manager or Field Team Leader
- Names and responsibilities of all field team members using the logbook (or involved with activities for which entries are being made)
- Weather conditions
- Field observations
- Names of any site visitors including entities that they represent

Sample Collection Activities

- Date(s) and times of the sample collection or event.
- Number and types of collected samples.
- Sample location with an emphasis on any changes to documentation in governing documents (i.e., SAP, FSP). This may include measurements from reference points or sketches of sample locations with respect to local features.
- Sample identification numbers, including any applicable cross-references to split samples or samples collected by another entity.
- A description of sampling methodology, or reference to any governing document (i.e., FSP, SAP, QAPP).
- Summary of equipment preparation and decontamination procedures.
- Sample description including depth, color, texture, moisture content, and evidence of waste material or staining.
- Air monitoring (field screening) results.
- Types of laboratory analyses requested.

Site Health and Safety Activities

- All safety, accident, and/or incident reports.

SOP	1501.01				
GROUP	Field Documentation				
SUB-GROUP					
TITLE	Field Logbook				
DATE	11/19/2001	FILE	1501-01.DOC	PAGE	3 of 3

- Real-time personnel air monitoring results, if applicable, or if not documented in the HASP.
- Heat/cold stress monitoring data, if applicable.
- Reasons for upgrades or downgrades in personal protective equipment.
- Health and safety inspections, checklists (drilling safety guide), meetings/briefings.
- Calibration records for field instruments.

Oversight Activities

- Progress and activities performed by contractors including operating times.
- Deviations of contractor activities with respect to project governing documents (i.e., specifications).
- Contractor sampling results and disposition of contingent soil materials/stockpiles.
- Excavation specifications and locations of contractor confirmation samples.
- General site housekeeping and safety issues by site contractors.

SOP	1502.01				
GROUP	Field Documentation				
SUB-GROUP					
TITLE	Photograph Logs				
DATE	11/19/2001	FILE	1502-01.DOC	PAGE	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the requirements for collecting information related to photodocumentation of site activities.

PROCEDURE

- Uniquely number each roll of film obtained for use.
- Record the following information for each negative exposed:
 1. Date and Time
 2. Photographer Name
 3. Witness Name
 4. Orientation (Landscape, Portrait, or Panaoramic)
 5. Description (including activity being performed, specific equipment of interest, sample location(s), compass direction photographer is facing)
- Record "NA" for the negatives not used if the roll is not completely used prior to development.
- Record unique roll number on receipt when film is submitted for development.
- Verify descriptions on log with negative numbers when photographs are received from processing.

FORMS

Blank Photograph Logs can be printed from WESTON On-Line from the *Records Management Application*. Selecting the *Reports/Project Planning/Blank Photo Logs* menu option will generate a project specific log with 36 entries.

SOP	0110.01				
GROUP	Database Management System				
SUB-GROUP	Data Collection and Acquisition				
TITLE	Sample Nomenclature				
DATE	02/26/2009	FILE	0110-20060227.DOC	PAGE	1 of 2

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the sample nomenclature for analytical samples that will generate unique sample names compatible with most data management systems. The sample nomenclature is based upon specific requirements for the reporting of these results. A site specific data management plan should be prepared prior to sample collection.

PROCEDURE

SAMPLE NOMENCLATURE – SOIL AND SEDIMENT

Area of Concern – ID – Depth - Collection Type + QC Type

Where:

Area of Concern: A four-digit identifier used to designate the particular Area of Concern (AOC) that the location where the sample was collected.

ID: A three-digit identifier used to designate the particular location in the AOC from which the sample was collected or the center of the composite sample.

Depth: A two-digit code used to designate what depth of sample was collected:

03	0 to 3 inches
06	3 to 6 inches
12	6 to 12 inches

Collection Type: A one-digit code used to designate what type of sample was collected:

1	Surface Water
2	Ground Water
3	Leachate
4	Field QC/water sample
5	Soil/Sediment

6	Oil
7	Waste
8	Other
9	Drinking Water

QC Type: A one-digit code used to designate the QC type of the sample:

1	Normal
2	Duplicate
3	Rinsate Blank
4	Trip Blank
5	Field Blank
6	Confirmation

Examples:

- **2054-055-06-51:** Represents the normal soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.
- **2054-055-06-52:** Represents the duplicate soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.
- **2054-055-06-43:** Represents the rinsate water sample collected after the last sample of the day if last sample was collected from AOC 2054 at location 055 from 3 to 6 inches of depth.

SOP	0110.01				
GROUP	Database Management System				
SUB-GROUP	Data Collection and Acquisition				
TITLE	Sample Nomenclature				
DATE	02/26/2009	FILE	0110-20060227.DOC	PAGE	2 of 2

SAMPLE NOMENCLATURE – WATER (from fixed station or location to be sampled more than once)

WELL OR STATION – YYYYMMDD - Collection Type + QC Type

Where:

Well or Station: For Wells and boreholes always assume there will be 10 or more so Monitoring Well 1 becomes designated MW01 or MW-01. If it is anticipated that there will be over 100 wells designate Monitoring Well 1 as MW001 or MW-001.

YYYYMMDD: A four-digit year + two-digit month + two-digit day

Collection Type: A one-digit code used to designate what type of sample was collected and are shown on page 1.

QC Type: A one-digit code used to designate the QC type of the sample and are shown on page 1.

Examples:

- **MW01-20090226-21:** Represents the normal groundwater sample collected from Monitoring Well 1 on 26 February 2009.
- **MW01-20090226-44:** Represents the trip blank in the same ice chest as the groundwater sample in the previous collected from Monitor Well 1 on 02/26/2009. All trip blanks must have a sample ID and they must be unique and on the Chain-of-Custody.
- **2054-000-00-43:** Represents the rinsate sample from AOC 2054

APPENDIX B

SITE-SPECIFIC DATA QUALITY OBJECTIVES

SITE-SPECIFIC DATA QUALITY OBJECTIVES
MARQUEZ URANIUM MINE
GRANTS, MCKINLEY COUNTY, NEW MEXICO

STEP 1. STATE THE PROBLEM	
Legacy uranium mine sites in the Grants Mining District of northwest New Mexico may contain soil/sediment and mine waste rock that are elevated in trace metals and radionuclides above background concentrations which may pose a hazard to human health and the environment.	
STEP 2. IDENTIFY THE DECISION	
Does the soil environment at the generic 38-acre uranium mine site contain hazardous and radiological materials at concentrations that: 1) equal or exceed a value of two standard deviations above the mean site-specific background concentration for a specific radionuclide; or 2) exceed three times the natural background concentrations for the specific radionuclide, whichever is lower. If these concentrations satisfy the criteria in 1) and 2), the conditions constitute and establish an “ <i>observed release</i> ” per the HRS Guidance Manual, Section 5.1 page 55; and the CERCLA SI Guidance in Section 4.9.4 page 89-90, (EPA/540-R-92-021).	
IDENTIFY THE ALTERNATIVE ACTIONS THAT MAY BE TAKEN BASED ON THE DECISIONS.	<ul style="list-style-type: none"> If the concentrations of hazardous and radiological materials in soil at the uranium mine site constitute an <i>observed release</i>, then further remedial action under CERCLA will be recommended.
STEP 3. IDENTIFY INPUTS TO THE DECISION	
INFORMATIONAL INPUTS NEEDED TO RESOLVE A DECISION.	<ul style="list-style-type: none"> Elevated metal and radionuclide concentrations in soil at the uranium mine site are equal to or exceed two standard deviations above the mean site-specific background concentrations. Elevated metal and radionuclide concentrations in soil at the uranium mine site are equal to or exceed by three times the mean background concentrations for radiological measurement and soil sampling.
SOURCES FOR EACH INFORMATIONAL INPUT AND INPUTS THAT ARE OBTAINED THROUGH ENVIRONMENTAL MEASUREMENTS.	<ul style="list-style-type: none"> Radiological gamma survey measurements with hand-held NaI detector instrument conducted at 125-foot grid spacing across site area and at unique site features. Background radiological measurements collected at up to four off-site locations will provide an average background radioactivity concentration for comparison. Field measurements of gamma activity are collected and the field variance is calculated to determine the number of soil/sediments to be collected. Background surface soil samples analyzed by a laboratory for 23 metals and isotopes of three or four radionuclides. Suspected hot spot soil locations within the mine site property analyzed by a laboratory for 23 metals and isotopes of three or four radionuclides.

**SITE-SPECIFIC DATA QUALITY OBJECTIVES
MARQUEZ URANIUM MINE
(CONTINUED)**

STEP 3. IDENTIFY INPUTS TO THE DECISION (Continued)	
BASIS FOR THE CONTAMINANT SPECIFIC ACTION LEVELS.	<ul style="list-style-type: none"> • Concentrations of hazardous materials and radionuclides more than three times the background concentrations constitute an “observed release” per the HRS Guidance Manual, Section 5.1 page 55. • Concentrations of metal and radionuclide concentrations in soil/sediment that are equal to or exceed two standard deviations above the mean site-specific background concentrations constitute an observed release per Section 4.9.4 (page 89) of the guidance document for performing site inspections under CERCLA.
POTENTIAL SAMPLING TECHNIQUES AND APPROPRIATE ANALYTICAL METHODS.	<ul style="list-style-type: none"> • Gamma radioactivity concentrations in cpm and/or uR/hr (dose) will be determined using field instruments to measure radioactivity on the soil surface and at 3 feet high for a 60-second count rate. • Gamma measurements will be used to calculate the average background concentration, the average site concentration, and the range. • Laboratory analyte concentrations for specific metals and radionuclides will be used to calculate: the background mean concentrations, the site mean concentrations, the range, and the variance.
STEP 4. DEFINE THE BOUNDARIES OF THE STUDY	
DOMAIN OF GEOGRAPHIC AREA WITHIN WHICH ALL DECISIONS MUST APPLY.	Property boundary surrounding uranium mine site and/or all areas suspected of impact by mine activities and/or natural erosion processes that may have dispersed on-site materials beyond property boundaries.
CHARACTERISTICS THAT DEFINE THE POPULATION OF INTEREST.	Gamma radiation and radionuclide concentration measured in soil/sediments impacted by mine waste rock.
DETERMINATION OF WHEN TO COLLECT DATA.	<ul style="list-style-type: none"> • Data will be collected after target uranium mine sites are identified and access is acquired from landowners. • Field measurements of background gamma activity and site-specific activity will be collected using a grid system. • Determination of the field variance from the field measurements will be used in a formula to calculate the number of soil/sediments to be collected for laboratory analysis.

SITE-SPECIFIC DATA QUALITY OBJECTIVES
MARQUEZ URANIUM MINE
(CONTINUED)

STEP 4. DEFINE THE BOUNDARIES OF THE STUDY (Continued)	
PRACTICAL CONSTRAINTS ON DATA COLLECTION.	<ul style="list-style-type: none"> • Access to the site and/or appropriate background area is not attainable due to landowner and/or physical constraints. • Field radiological measurements may be unreliable due to excessive soil moisture, inclement weather, equipment malfunction, or operator error. • Erroneous determination of field gamma activity measurements and subsequent erroneous calculation of the field variance may result in an inadequate number of soil/sediments collected for laboratory analysis.
STEP 5. DEVELOP A DECISION RULE	
SPECIFY THE PARAMETER THAT CHARACTERIZES THE POPULATION OF INTEREST.	<ul style="list-style-type: none"> • Field measurements of gamma radioactivity will be used to calculate: the mean background gamma concentration; the on-site mean gamma concentration; the on-site range of gamma concentrations; and the field variance of the on-site gamma concentration. • The on-site gamma concentrations will be compared to the mean background gamma concentration of the mine site to determine if the concentration is equal to or two times the mean. • Laboratory analyte concentrations for specific metals and radionuclides will be used to calculate the specific mean background soil/sediment mean concentrations; the specific on-site mean soil/sediment concentrations; the range of on-site specific concentrations; and the statistical variability of on-site concentrations, e.g., the sample variance and standard deviation. • Laboratory analyte concentrations that are equal to or exceed three times the mean background concentrations will be characterized as an observed release. • Laboratory analyte concentrations that are equal to or exceed two standard deviations above the mean background concentration will be characterized as an observed release.
SPECIFY THE ACTION LEVEL FOR THE DECISION.	<ul style="list-style-type: none"> • Field measurements of gamma radioactivity that are equal to or exceed twice the mean background gamma activity concentration. • Laboratory analyte concentrations that are equal to or exceed three times the mean background concentrations will be characterized as an observed release. • Laboratory analyte concentrations that are equal to or exceed two standard deviations above the mean background concentration will be characterized as an observed release.
DECISION RULES.	<ul style="list-style-type: none"> • If on-site field gamma activity measurements exceed the mean background gamma activity concentration by more than two times, the likelihood of an observed release is high.

SITE-SPECIFIC DATA QUALITY OBJECTIVES
MARQUEZ URANIUM MINE
(CONTINUED)

STEP 6. SPECIFY LIMITS ON DECISION ERRORS	
DETERMINE THE POSSIBLE RANGE OF THE PARAMETER OF INTEREST.	<ul style="list-style-type: none"> • Limit for uncertainty in measurement is 20% (0.20) at a 95% confidence level for the data set. • Mean background gamma radioactivity concentrations typically range from 12-20 200 microroentgens per hour (uR/hr) or less than 3,000 to 5,000 counts per minute. • On-site uranium mine waste rock gamma radioactivity concentrations may range over uR/hr and higher, or several tens or hundreds of thousands cpm (>> 10,000-100,000 cpm). • Background concentration of radium-226 in soil is generally 1.0-1.5 picocuries per gram (pCi/g). • Uranium mass concentrations in soil typically measure 3 ug/g or 2 pCi/g. • Uranium mine site waste rock concentrations of radium-226 may exceed 100 pCi/g.
DEFINE BOTH TYPES OF DECISION ERRORS AND IDENTIFY THE POTENTIAL CONSEQUENCES OF EACH.	<p><u>Type I Error:</u> Deciding that the uranium mine site is represented by field measurements and/or sample results does not exceed three times the mean background concentration or two standard deviations above the mean background concentration when, in truth, it does. The consequence of this decision error is that the soil/sediment/waste rock material will remain in place, unremediated, possibly presenting a hazard to human health and the environment. This decision error is the most severe.</p> <p><u>Type II Error:</u> Deciding that the uranium mine site area represented by field measurements and/or sample results does exceed the mean background concentration by three times or two standard deviations when, in truth, it does not. The consequences of this decision error can potentially cause remedial action to continue under CERCLA and potentially divert resources from higher priority sites.</p>
TRUE STATE OF NATURE FOR EACH DECISION RULE.	<p><u>Type I:</u> The field and laboratory measurements of hazardous materials and radionuclide concentrations in soil are greater than three times or two standard deviations above the mean background concentrations.</p> <p><u>Type II:</u> The field and laboratory measurements of hazardous materials and radionuclide concentrations in soil are less than three times or two standard deviations above the mean background concentrations.</p>
DEFINITION OF THE TRUE STATE OF NATURE FOR THE MORE SEVERE DECISION ERROR AS THE BASELINE CONDITION OR THE NULL HYPOTHESES (H_0) AND FOR THE LESS SEVERE DECISION ERROR AS THE ALTERNATIVE HYPOTHESES (H_a). TRUE STATE OF NATURE FOR EACH DECISION RULE.	<p><u>Type I:</u> Ambient radioactivity levels impact human health.</p> <p><u>Type II:</u> Ambient radioactivity levels do not impact human health.</p>

SITE-SPECIFIC DATA QUALITY OBJECTIVES
MARQUEZ URANIUM MINE
(CONTINUED)

STEP 7. OPTIMIZE THE DESIGN	
REVIEW THE DQOs.	Determine what else can be done to improve the methodology. Get some internal and external review by other staff and agencies. Test implementation of proposed design/methodology at one or two sites, then review lessons learned. Make adjustments in design and improve methodology with more sites over time.
DEVELOP GENERAL SAMPLING AND ANALYSIS DESIGN. A total of up to 12 soil samples and 1 water sample will be collected from the uranium mine pits and waste areas within the Marquez Uranium Mine and analyzed to determine the presence of metals and radionuclides above background concentrations.	

APPENDIX C

TDD No. TO-0035-12-11-02

START3
Technical Direction Document

TDD #: TO-0035-12-11-02
Contract: EP-W-06-042

Assessment/Inspection Activities -
Enforcement Funds (0035)
Weston Solutions, Inc.

! = required field ☐ Moved To EAS

Note: Remaining Amount
includes \$0.00 in Reserve.

TDD Name: Marquez Mine		! Period: Base Period
! Purpose: Work Assignment Initiation		
! Priority: High		! Start Date: 11/14/2012
Overtime: Yes		! Completion Date: 10/31/2013
! Funding Category: Enforcement Funds		Invoice Unit:
! Project/Site Name: Marquez Mine		WorkArea: ASSESSMENT/INSPECTIONS ACTIVITIES
Project Address: Section 23,T13N,R9W; 2.5 miles east of the junction of State Hwys 509 and 605 and 13.5 miles directly north of Grants , NM		Activity: Integrated Assessment (IA)
County: McKinley		Work Area Code:
City, State: , NM		Activity Code: IA
Zip:		EMERGENCY CODE: <input type="checkbox"/> KAT <input type="checkbox"/> RIT
! SSID: A6FN		FPN:
CERCLIS: NMN000607486		Performance Based: No
Operable Unit:		

Authorized TDD Ceiling:	Cost/Fee	LOE (Hours)
Previous Action(s):	\$0.00	0.0
This Action:	\$30,000.00	0.0
New Total:	\$30,000.00	0.0

Specific Elements Assess the potential for short or long term clean-up actions., Perform field screening and analysis of samples.

Description of Work:

All activities performed in support of this TDD shall be in accordance with the contract and TO PWS.

The Grants Mining District provided significant uranium extraction and production in New Mexico from the 1950s until late into the 20th century. There are three mining sub-districts within the Grants Mining District: Ambrosia Lake, Laguna, and Marquez. Land ownership within these sub-districts consists of public, tribal, tribal trust and private property. These mining sub-districts contain 97 former legacy uranium mines and five mill sites. EPA is currently assessing the mine sites for releases of hazardous substances that may have impacted soil, surface water, sediment and ground water. Under this TDD, the contractor shall investigate mine water discharge locations, sample potentially impacted soil for elevated concentrations and radioactivity of elemental uranium and radionuclides, sample any surface water and sediment present for metals and radionuclides, and sample any accessible groundwater wells in the immediate area of the Marquez Mine site. The contractor shall document mine site features (e.g., open and plugged mine portals, waste rock piles, protore stockpiles, mining related structures, etc.), surface drainage features, ground water wells and all sample locations with photographs, descriptions, and geospatially. The contractor shall prepare and submit to EPA for review and approval a draft and final report for the site. Coordinate with SAM, Mark Purcell at purcell.mark@epa.gov or 214-665-6707 upon receipt of the TDD.

Accounting and Appropriation Information

SFO: 22

Line	DCN	IFMS	Budget / FY	Approp. Code	Budget Org Code	Program Element	Object Class	Site Project	Cost Org Code	Amount

1	ENC016	XXX	11	TD	06S	501EC7	2505	A6FNIA00	C001	\$30,000.00
---	--------	-----	----	----	-----	--------	------	----------	------	-------------

Funding Summary:		Funding
Previous:		\$0.00
This Action:		\$30,000.00
Total:		\$30,000.00

Funding Category

Enforcement Funds

Section

- Signed by Mark Purcell/R6/USEPA/US on 11/07/2012 10:02:26 AM, according to Jeff Criner/start6/rfw-

: Mark Purcell

Date: 11/07/2012

Phone #:

Project Officer Section - Signed by Cora Stanley/R6/USEPA/US on 11/08/2012 12:12:41 PM, according to Jeff Cri

Project Officer: Linda Carter

Date: 11/07/2012

Contracting Officer Section - Signed by Cora Stanley/R6/USEPA/US on 11/08/2012 12:12:41 PM, according to Jef

Contracting Officer: Cora Stanley

Date: 11/08/2012

Contractor Section

Contractor Contact:

Date:

APPENDIX D

LABORATORY DATA PACKAGES

WESTON SOLUTIONS, INC.

Marquez Mine DRS

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #13-03013-OR

April 4, 2013

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**

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V	Analytical Standard	0020
VI	Quality Control Sample Results Summary	0022
VII	Laboratory Technician's Notes & Run Logs	0025
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	Last Page Number	0399



EBERLINE
SERVICES

STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 12
Effective: 10/31/12
Page 14 of 14

Eberline Services – Oak Ridge Laboratory LABORATORY DATA SUPPORT CHECKLIST

MP-001-3

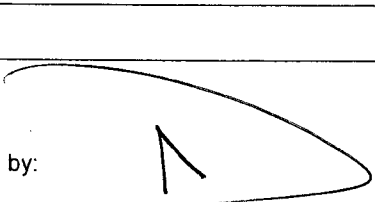
Eberline Services Work Order # 13-03013

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		3/5/13	KC	Sample Log-In
		4/2/13	HBS	Data Compilation
		4-2-13	MLT	First Technical Data Review
		4/2/13	MSA	Second Technical Data Review
		4/3/13	G	Data Entry/Electronic Deliverable
		4/3/13	G	Case Narrative
		04/03/13	EGT	Electronic Deliverable Proof
		4/3/13	MSA	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		4/3/13	MSA	QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:


Laboratory Manager


Date

4/4/13

Copy No. _____

Radiochemistry Services

0003

SECTION I
CHAIN OF CUSTODY

13-03013

USEPA

DateShipped: 3/4/2013

CarrierName: FedEx

AirbillNo: 794879663628

REC'D MAR 05 2013

CHAIN OF CUSTODY RECORD

Marquez Mine DRS

Contact Name: Kristie Warr

Contact Phone: 713-985-6600

No: 1-0035121102-130304-0001

Cooler #: 1

Lab: Eberline Services

Lab Phone: 865-481-0683

Lab #	Sample #	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Sample_Remarks	MS/MSD
4	MQZ-35-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	232,815 CPM	N
5	MQZ-49-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	212,575 CPM	N
6	MQZ-51-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	585,601 CPM	N
7	MQZ-51-2-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	585,601 CPM	N
8	MQZ-52-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	191,195 CPM	N
9	MQZ-61-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	135,829 CPM	N
10	MQZ-62-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	166,617 CPM	N
11	MQZ-63-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	510,086 CPM	N
12	MQZ-64-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	143,315 CPM	N
13	MQZ-65-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	135,378 CPM	N
14	MQZ-66-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	155,002 CPM	N
15	MQZ-BKGD-E-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	7,827 CPM	N
16	MQZ-BKGD-N-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	13,739 CPM	N
17	MQZ-BKGD-S-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	8,511 CPM	N
18	MQZ-BKGD-W-130303	Gamma Spectroscopy	Soil	3/3/2013	1	16 oz jar	None	9,074 CPM	N

Special Instructions: Level IV Deliverable, Standard TAT

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
15/samples	<i>[Signature]</i>	3/4/13	Fedex								
	FedEx		Kristie Calot	3/5/13	845						



EBERLINE
SERVICES

Oak Ridge Laboratory

Internal Chain of Custody

Work Order #

13-03013

Lab Deadline

3/28/2013

Analysis

Gamma - Level 4

Sample Matrix


Soil/Solid

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
21 day ingrowth: Report Ac228, Bi214, K40, Pa234m, Pb212/214, Th234, Tl208, Ra226 from Bi214 & all positives	04	55	I1.5
	05	50	I1.5
	06	60	I1.5
	07	59	I1.5
	08	60	I1.5
	09	56	I1.5
	10	56	I1.5
	11	53	I1.5
	12	49	I1.5
	13	59	I1.5
	14	49	I1.5
	15	52	I1.5
	16	57	I1.5
	17	48	I1.5
	18	53	I1.5

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1230 Kerry Saei	3-5-13
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0955 Kerry Saei	3-6-13
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0955 C	7/16/12
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0955 C	4/11/12 0902
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

SECTION II
SAMPLE ACKNOWLEDGEMENT

Client Name	Contract/PO	Project Type	Date Received	Required Turnaround Days	Eberline Services Work Order
Weston Solutions, Inc.	0082148	Environmental	03/05/2013	28	13-03013
Project Name	Client WO	Sample Disp	Lab Deadline	Internal Deadline	Client Deadline
82148	Marquez Mine DRS	H	03/28/2013	04/01/2013	04/02/2013

 EBERLINE SERVICES Sample Log In Report	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: (865) 481-0683 Fax: (865) 483-4621	Invoice	ACCOUNTS PAYABLE Weston Solutions, Inc. 5599 San Felipe Suite 700 Houston, TX 77056	Report Data	Kristie Warr Weston Solutions, Inc. 5599 San Felipe Suite 700 Houston, TX 77056
		Voice	713-985-6686	Voice	713-985-6636
		Fax	713-985-6703	Fax	713-985-6703
		Contact	Kristie Warr 713-985-6636 713-985-6703		



EBERLINE
SERVICES

STANDARD OPERATING PROCEDURE

Sample Receiving

MP-001, Rev. 12
Effective: 10/31/12
Page 13 of 14

Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST

MP-001-2

WORK ORDER # 13-03013

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	Y	N	<u>N/A</u>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS **NO**, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: Kristen Coulston DATE: 3/5/13

SECTION III
CASE NARRATIVE



EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-35394

April 4, 2013

Kristie Warr
Weston Solutions, Inc.
5599 San Felipe Suite 700
Houston, TX 77056

CASE NARRATIVE
Work Order # 13-03013-OR

SAMPLE RECEIPT

This work order contains fifteen soil samples received 03/05/2013. These samples were analyzed by Gamma Spectroscopy.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
MQZ-35-130303	13-03013-04	MQZ-64-130303	13-03013-12
MQZ-49-130303	13-03013-05	MQZ-65-130303	13-03013-13
MQZ-51-130303	13-03013-06	MQZ-66-130303	13-03013-14
MQZ-51-2-130303	13-03013-07	MQZ-BKGD-E-130303	13-03013-15
MQZ-52-130303	13-03013-08	MQZ-BKGD-N-130303	13-03013-16
MQZ-61-130303	13-03013-09	MQZ-BKGD-S-130303	13-03013-17
MQZ-62-130303	13-03013-10	MQZ-BKGD-W-130303	13-03013-18
MQZ-63-130303	13-03013-11		

ANALYTICAL METHODS

Gamma Spectroscopy was performed using Method LANL ER-130 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

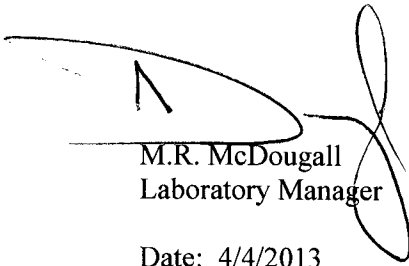
GAMMA SPECTROSCOPY

Samples were dried, homogenized and placed into appropriate gamma spectroscopy geometry containers. Samples were then sealed for 21 days to allow for ingrowth of Radon-222 and progeny. Samples were counted on High Purity Germanium (HPGe) gamma ray detectors. Energy lines from Lead-214 and Bismuth-214 were analyzed for determinations of Radium-226 activity.

Samples demonstrated acceptable results for all gamma-emitting radionuclides as reported. The method blank demonstrated acceptable results for all radionuclides as reported. Results for the Bismuth-214, Potassium-40 and Lead-214 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Cobalt-60 and Cesium-137 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 4/4/2013

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://www.eberlineservices.com/client.htm> to provide us with feedback on our services.

SECTION IV
ANALYTICAL RESULTS SUMMARY

Eberline Analytical

Final Report of Analysis

Report To:

Kristie Warr
Weston Solutions, Inc.
5599 San Felipe Suite 700
Houston, TX 77056

Work Order Details:

SDG: **13-03013**Project: **Marquez Mine DRS**Analysis Category: **ENVIRONMENTAL**Sample Matrix: **SO**

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
13-03013-01	LCS	KNOWN	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Cobalt-60	LANL ER-130 Modified	1.32E+02	5.29E+00			pCi/g
13-03013-01	LCS	KNOWN	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Cesium-137	LANL ER-130 Modified	8.04E+01	3.22E+00			pCi/g
13-03013-01	LCS	SPIKE	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Cobalt-60	LANL ER-130 Modified	1.37E+02	9.38E+00	1.17E+01	5.95E-01	pCi/g
13-03013-01	LCS	SPIKE	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Cesium-137	LANL ER-130 Modified	8.31E+01	8.47E+00	9.48E+00	4.73E-01	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	-2.32E-02	5.63E-02	5.64E-02	1.00E-01	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	2.36E-02	3.99E-02	3.99E-02	8.00E-02	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	-1.19E-02	1.91E-01	1.91E-01	4.18E-01	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	9.89E-01	1.51E+00	1.51E+00	3.37E+00	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	-2.77E-02	3.05E-02	3.06E-02	5.05E-02	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	-4.77E-02	3.77E-02	3.78E-02	6.09E-02	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	2.36E-02	3.99E-02	3.99E-02	8.00E-02	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	-6.64E-02	3.28E-01	3.28E-01	6.13E-01	pCi/g
13-03013-02	MBL	BLANK	03/05/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	-4.31E-02	4.90E-02	4.90E-02	8.94E-02	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	1.16E+00	9.21E-01	9.23E-01	1.16E+00	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	1.08E+02	6.68E+00	8.68E+00	5.23E-01	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	2.21E+01	3.81E+00	3.97E+00	2.89E+00	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	5.32E+01	3.09E+01	3.10E+01	3.26E+01	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	3.91E+01	6.64E+00	6.94E+00	7.50E+00	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	4.24E+00	7.53E-01	7.84E-01	6.82E-01	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	1.10E+02	1.25E+01	1.37E+01	6.45E-01	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	1.08E+02	6.68E+00	8.68E+00	5.23E-01	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	5.33E+01	8.77E+00	9.19E+00	8.52E+00	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	5.79E-01	5.32E-01	5.33E-01	8.38E-01	pCi/g
13-03013-03	DUP	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	4.94E+00	1.73E+00	1.75E+00	2.48E+00	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Report To:

Kristie Warr
Weston Solutions, Inc.
5599 San Felipe Suite 700
Houston, TX 77056

Work Order Details:

SDG:

13-03013

Project:

Marquez Mine DRS

Analysis Category:

ENVIRONMENTAL

Sample Matrix:

SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	1.97E+00	7.00E-01	7.07E-01	1.08E+00	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	1.08E+02	6.66E+00	8.66E+00	5.28E-01	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.93E+01	3.96E+00	4.08E+00	3.06E+00	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	6.60E+01	2.84E+01	2.86E+01	3.18E+01	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	3.91E+01	6.63E+00	6.92E+00	7.49E+00	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	4.04E+00	7.27E-01	7.56E-01	6.82E-01	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	1.09E+02	1.25E+01	1.37E+01	6.55E-01	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	1.08E+02	6.66E+00	8.66E+00	5.28E-01	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	6.13E+01	8.38E+00	8.95E+00	8.31E+00	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	5.85E-01	5.39E-01	5.40E-01	8.47E-01	pCi/g
13-03013-04	DO	MQZ-35-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	5.60E+00	1.96E+00	1.98E+00	2.47E+00	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	8.63E-01	2.55E-01	2.59E-01	3.58E-01	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	1.38E+01	9.16E-01	1.16E+00	1.97E-01	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.39E+01	2.15E+00	2.27E+00	1.14E+00	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	1.25E+01	1.20E+01	1.20E+01	1.18E+01	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	8.15E+00	2.26E+00	2.30E+00	2.29E+00	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	3.55E-01	1.20E-01	1.21E-01	2.28E-01	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	1.43E+01	2.37E+00	2.48E+00	2.26E-01	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	1.38E+01	9.16E-01	1.16E+00	1.97E-01	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	5.54E+00	3.09E+00	3.10E+00	2.91E+00	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	3.78E-01	1.31E-01	1.32E-01	3.04E-01	pCi/g
13-03013-05	TRG	MQZ-49-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	1.37E+00	7.36E-01	7.39E-01	9.59E-01	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	7.17E-01	5.17E+00	5.17E+00	6.04E+00	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	2.50E+03	1.38E+02	1.88E+02	2.86E+00	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.86E+01	1.23E+01	1.23E+01	1.65E+01	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	1.11E+03	2.12E+02	2.20E+02	1.76E+02	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	1.05E+03	9.84E+01	1.12E+02	2.71E+01	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	8.12E+01	1.27E+01	1.33E+01	3.38E+00	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	2.41E+03	2.68E+02	2.95E+02	3.52E+00	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	2.50E+03	1.38E+02	1.88E+02	2.86E+00	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	5.28E+02	5.47E+01	6.10E+01	3.55E+01	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	1.19E+01	3.25E+00	3.31E+00	4.49E+00	pCi/g
13-03013-06	TRG	MQZ-51-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	6.42E+01	1.17E+01	1.21E+01	1.21E+01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample;MBL=Blank;DUP=Duplicate;TRG=Normal Sample;DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Report To:

Kristie Warr
Weston Solutions, Inc.
5599 San Felipe Suite 700
Houston, TX 77056

Work Order Details:

SDG: 13-03013
Project: Marquez Mine DRS
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	4.65E+00	4.14E+00	4.15E+00	6.10E+00	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	2.52E+03	1.39E+02	1.89E+02	2.89E+00	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.73E+01	1.25E+01	1.25E+01	1.68E+01	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	1.08E+03	1.90E+02	1.98E+02	1.80E+02	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	9.82E+02	9.16E+01	1.05E+02	2.78E+01	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	7.57E+01	1.19E+01	1.25E+01	3.38E+00	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	2.47E+03	2.75E+02	3.03E+02	3.59E+00	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	2.52E+03	1.39E+02	1.89E+02	2.89E+00	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	7.45E+02	7.15E+01	8.11E+01	3.62E+01	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	9.84E+00	3.18E+00	3.22E+00	4.53E+00	pCi/g
13-03013-07	TRG	MQZ-51-2-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	8.25E+01	1.33E+01	1.39E+01	1.24E+01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	1.24E-01	5.20E-01	5.20E-01	7.97E-01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	6.74E+01	3.70E+00	5.06E+00	3.69E-01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.36E+01	2.65E+00	2.74E+00	2.15E+00	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	2.65E+01	1.94E+01	1.95E+01	2.28E+01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	3.79E+01	5.08E+00	5.44E+00	4.40E+00	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	1.13E+00	3.71E-01	3.75E-01	4.52E-01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	6.73E+01	1.10E+01	1.15E+01	4.63E-01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	6.74E+01	3.70E+00	5.06E+00	3.69E-01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	2.36E+01	4.54E+00	4.70E+00	5.59E+00	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	3.89E-01	3.86E-01	3.86E-01	6.11E-01	pCi/g
13-03013-08	TRG	MQZ-52-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	3.23E+00	1.44E+00	1.45E+00	1.80E+00	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	-1.57E-01	6.42E-01	6.42E-01	1.08E+00	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	1.32E+02	7.00E+00	9.74E+00	5.24E-01	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.86E+01	3.51E+00	3.64E+00	2.87E+00	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	1.34E+02	3.30E+01	3.37E+01	3.05E+01	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	6.14E+01	6.74E+00	7.44E+00	6.26E+00	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	7.73E-01	4.27E-01	4.29E-01	5.59E-01	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	1.30E+02	2.13E+01	2.24E+01	6.60E-01	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	1.32E+02	7.00E+00	9.74E+00	5.24E-01	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	1.05E+02	1.13E+01	1.25E+01	8.13E+00	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	7.70E-01	5.40E-01	5.42E-01	8.45E-01	pCi/g
13-03013-09	TRG	MQZ-61-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	8.57E+00	1.96E+00	2.01E+00	2.50E+00	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample;MBL=Blank;DUP=Duplicate;TRG=Normal Sample;DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Report To:

Kristie Warr
Weston Solutions, Inc.
5599 San Felipe Suite 700
Houston, TX 77056

Work Order Details:

SDG: **13-03013**
Project: Marquez Mine DRS
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	-4.96E-02	6.09E-01	6.09E-01	1.02E+00	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	1.02E+02	6.27E+00	8.16E+00	4.79E-01	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.85E+01	3.52E+00	3.64E+00	2.65E+00	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	3.90E+01	2.80E+01	2.81E+01	2.88E+01	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	5.98E+01	8.11E+00	8.67E+00	6.38E+00	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	3.33E+00	6.15E-01	6.38E-01	6.07E-01	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	1.02E+02	1.16E+01	1.27E+01	5.92E-01	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	1.02E+02	6.27E+00	8.16E+00	4.79E-01	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	3.37E+01	6.50E+00	6.72E+00	7.67E+00	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	6.54E-01	4.84E-01	4.85E-01	7.62E-01	pCi/g
13-03013-10	TRG	MQZ-62-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	4.69E+00	1.45E+00	1.47E+00	2.27E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	6.60E-01	1.78E+00	1.78E+00	2.66E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	4.23E+02	2.37E+01	3.21E+01	1.25E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	2.43E+01	7.91E+00	8.01E+00	6.96E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	1.63E+03	2.13E+02	2.28E+02	7.75E+01	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	1.19E+02	1.44E+01	1.56E+01	1.41E+01	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	1.09E+01	1.89E+00	1.98E+00	1.44E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	4.27E+02	4.75E+01	5.23E+01	1.51E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	4.23E+02	2.37E+01	3.21E+01	1.25E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	1.43E+03	1.25E+02	1.45E+02	2.01E+01	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	1.90E+00	1.33E+00	1.33E+00	2.03E+00	pCi/g
13-03013-11	TRG	MQZ-63-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	9.85E+01	1.23E+01	1.33E+01	5.68E+00	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	3.26E-01	4.15E-01	4.16E-01	7.21E-01	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	4.66E+01	2.62E+00	3.55E+00	3.18E-01	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.59E+01	2.85E+00	2.97E+00	1.74E+00	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	2.41E+01	1.49E+01	1.50E+01	1.92E+01	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	2.76E+01	3.74E+00	4.00E+00	4.08E+00	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	7.27E-01	2.88E-01	2.90E-01	3.41E-01	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	4.59E+01	7.52E+00	7.88E+00	3.97E-01	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	4.66E+01	2.62E+00	3.55E+00	3.18E-01	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	2.16E+01	4.03E+00	4.18E+00	5.01E+00	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	5.29E-01	3.02E-01	3.04E-01	5.35E-01	pCi/g
13-03013-12	TRG	MQZ-64-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	2.64E+00	2.66E+00	2.67E+00	1.52E+00	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample;MBL=Blank;DUP=Duplicate;TRG=Normal Sample;DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Report To:

Kristie Warr
Weston Solutions, Inc.
5599 San Felipe Suite 700
Houston, TX 77056

Work Order Details:

SDG: **13-03013**
Project: Marquez Mine DRS
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	8.34E-01	6.10E-01	6.11E-01	7.78E-01	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	5.21E+01	3.00E+00	4.02E+00	3.40E-01	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.41E+01	2.71E+00	2.80E+00	1.98E+00	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	2.60E+00	1.32E+01	1.32E+01	2.23E+01	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	1.81E+01	3.97E+00	4.08E+00	4.86E+00	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	1.68E+00	3.61E-01	3.71E-01	4.43E-01	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	5.40E+01	6.17E+00	6.76E+00	4.24E-01	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	5.21E+01	3.00E+00	4.02E+00	3.40E-01	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	2.00E+01	4.53E+00	4.64E+00	5.49E+00	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	4.18E-01	3.33E-01	3.33E-01	5.86E-01	pCi/g
13-03013-13	TRG	MQZ-65-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	2.23E+00	1.22E+00	1.23E+00	1.72E+00	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Actinium-228	LANL ER-130 Modified	4.62E-01	4.97E-01	4.98E-01	8.57E-01	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Bismuth-214	LANL ER-130 Modified	8.30E+01	4.47E+00	6.17E+00	3.94E-01	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.73E+01	3.26E+00	3.37E+00	2.14E+00	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	4.70E+01	2.43E+01	2.44E+01	2.36E+01	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-210	LANL ER-130 Modified	5.19E+01	5.80E+00	6.38E+00	5.02E+00	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-212	LANL ER-130 Modified	1.75E+00	4.88E-01	4.96E-01	4.93E-01	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Lead-214	LANL ER-130 Modified	8.28E+01	1.36E+01	1.42E+01	4.98E-01	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Radium-226	LANL ER-130 Modified	8.30E+01	4.47E+00	6.17E+00	3.94E-01	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thorium-234	LANL ER-130 Modified	1.38E+01	5.19E+00	5.24E+00	6.10E+00	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Thallium-208	LANL ER-130 Modified	5.28E-01	4.16E-01	4.16E-01	6.56E-01	pCi/g
13-03013-14	TRG	MQZ-66-130303	03/03/13 00:00	3/5/2013	4/1/2013	13-03013	Uranium-235	LANL ER-130 Modified	2.76E+00	1.60E+00	1.61E+00	2.02E+00	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Actinium-228	LANL ER-130 Modified	6.16E-01	1.55E-01	1.58E-01	2.32E-01	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Bismuth-214	LANL ER-130 Modified	9.04E-01	1.46E-01	1.54E-01	1.27E-01	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.54E+01	2.04E+00	2.18E+00	4.92E-01	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	2.09E+00	3.36E+00	3.36E+00	6.68E+00	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-210	LANL ER-130 Modified	7.72E-01	7.78E-01	7.79E-01	1.41E+00	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-212	LANL ER-130 Modified	5.80E-01	1.27E-01	1.31E-01	8.77E-02	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-214	LANL ER-130 Modified	8.75E-01	1.61E-01	1.67E-01	1.19E-01	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Radium-226	LANL ER-130 Modified	9.04E-01	1.46E-01	1.54E-01	1.27E-01	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thorium-234	LANL ER-130 Modified	2.41E-02	8.64E-01	8.64E-01	1.50E+00	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thallium-208	LANL ER-130 Modified	5.22E-01	1.82E-01	1.84E-01	2.97E-01	pCi/g
13-03013-15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Uranium-235	LANL ER-130 Modified	1.17E-01	2.41E-01	2.41E-01	4.16E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample;MBL=Blank;DUP=Duplicate;TRG=Normal Sample;DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical

Final Report of Analysis

Report To:

Kristie Warr
Weston Solutions, Inc.
5599 San Felipe Suite 700
Houston, TX 77056

Work Order Details:

SDG: **13-03013**
Project: Marquez Mine DRS
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Actinium-228	LANL ER-130 Modified	1.25E+00	3.28E-01	3.34E-01	5.30E-01	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Bismuth-214	LANL ER-130 Modified	1.72E+00	2.18E-01	2.35E-01	1.33E-01	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Potassium-40	LANL ER-130 Modified	2.46E+01	3.13E+00	3.38E+00	6.88E-01	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	5.21E+00	5.86E+00	5.87E+00	7.78E+00	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-210	LANL ER-130 Modified	1.87E+00	1.09E+00	1.09E+00	1.36E+00	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-212	LANL ER-130 Modified	1.70E+00	3.81E-01	3.91E-01	1.26E-01	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-214	LANL ER-130 Modified	1.94E+00	3.58E-01	3.71E-01	1.42E-01	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Radium-226	LANL ER-130 Modified	1.72E+00	2.18E-01	2.35E-01	1.33E-01	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thorium-234	LANL ER-130 Modified	2.06E+00	1.16E+00	1.16E+00	1.93E+00	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thallium-208	LANL ER-130 Modified	1.28E+00	2.03E-01	2.13E-01	2.08E-01	pCi/g
13-03013-16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Uranium-235	LANL ER-130 Modified	-9.31E-02	3.20E-01	3.20E-01	5.21E-01	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Actinium-228	LANL ER-130 Modified	4.53E-01	1.73E-01	1.74E-01	3.03E-01	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Bismuth-214	LANL ER-130 Modified	2.58E-01	8.80E-02	8.90E-02	9.60E-02	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Potassium-40	LANL ER-130 Modified	9.47E+00	1.38E+00	1.46E+00	4.24E-01	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	1.34E+00	3.15E+00	3.15E+00	6.14E+00	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-210	LANL ER-130 Modified	5.50E-01	6.82E-01	6.83E-01	9.42E-01	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-212	LANL ER-130 Modified	2.83E-01	7.62E-02	7.75E-02	7.72E-02	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-214	LANL ER-130 Modified	2.76E-01	9.72E-02	9.83E-02	9.73E-02	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Radium-226	LANL ER-130 Modified	2.58E-01	8.80E-02	8.90E-02	9.60E-02	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thorium-234	LANL ER-130 Modified	2.35E-01	6.14E-01	6.14E-01	1.11E+00	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thallium-208	LANL ER-130 Modified	3.24E-01	1.66E-01	1.67E-01	2.22E-01	pCi/g
13-03013-17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Uranium-235	LANL ER-130 Modified	-5.61E-02	1.82E-01	1.82E-01	3.09E-01	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Actinium-228	LANL ER-130 Modified	4.49E-01	1.88E-01	1.89E-01	2.78E-01	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Bismuth-214	LANL ER-130 Modified	3.03E-01	9.08E-02	9.21E-02	8.27E-02	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Potassium-40	LANL ER-130 Modified	1.01E+01	1.48E+00	1.57E+00	4.29E-01	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Protactinium-234m	LANL ER-130 Modified	1.17E+00	2.67E+00	2.67E+00	5.32E+00	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-210	LANL ER-130 Modified	5.55E-01	4.89E-01	4.90E-01	8.96E-01	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-212	LANL ER-130 Modified	3.01E-01	8.70E-02	8.83E-02	6.41E-02	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Lead-214	LANL ER-130 Modified	2.92E-01	9.22E-02	9.34E-02	8.18E-02	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Radium-226	LANL ER-130 Modified	3.03E-01	9.08E-02	9.21E-02	8.27E-02	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thorium-234	LANL ER-130 Modified	1.85E-01	5.37E-01	5.37E-01	9.94E-01	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Thallium-208	LANL ER-130 Modified	2.56E-01	8.49E-02	8.59E-02	1.15E-01	pCi/g
13-03013-18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	3/5/2013	4/2/2013	13-03013	Uranium-235	LANL ER-130 Modified	-7.00E-03	1.58E-01	1.58E-01	2.68E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE
SERVICES

EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

SECTION V
ANALYTICAL STANDARD

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

90070

736g

Sand in 16 Ounce PP Taral Jar Filled to Top

GAS-1202

Customer: Eberline / Oak Ridge, TN

P.O. No.: 7393, Item 8

Reference Date: 01-Jan-2012 **12:00 PM EST** **Grams of Master Source:** 0.017043

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Additional radionuclides were added gravimetrically from solutions calibrated by gamma-ray spectrometry, ionization chamber, or liquid scintillation counting. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* yps/gram	This Source yps	Uncertainty*, %			Calibration Method*
					Type	u _A	u _B	U
Am-241	59.5	1.580E+05	—	1.974E+03	0.1	1.7	3.5	4π LS
Cd-109	88.0	4.626E+02	1.677E+05	2.858E+03	0.5	2.3	4.7	HPGe
Co-57	122.1	2.718E+02	8.795E+04	1.499E+03	0.4	2.0	4.1	HPGe
Ce-139	165.9	1.376E+02	1.245E+05	2.122E+03	0.4	1.9	3.9	HPGe
Hg-203	279.2	4.661E+01	2.707E+05	4.614E+03	0.3	1.9	3.8	HPGe
Sn-113	391.7	1.151E+02	1.755E+05	2.991E+03	0.4	1.9	3.9	HPGe
Cs-137	661.7	1.098E+04	1.128E+05	1.923E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.228E+05	7.206E+03	0.5	1.9	3.9	HPGe
Co-60	1173.2	1.925E+03	2.084E+05	3.552E+03	0.6	1.9	4.0	HPGe
Co-60	1332.5	1.925E+03	2.084E+05	3.552E+03	0.7	1.9	4.0	HPGe
Y-88	1836.1	1.066E+02	4.476E+05	7.629E+03	0.7	1.9	4.0	HPGe

* Master Source refers to Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
13-03013	Gamma	1	pCi	g	Weston Solutions, Inc.

Laboratory Control Sample

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
CO-60	0.76	103.59%	8.56%	100.00%	4.00%	1.32E+02	5.29E+00	1.37E+02	1.17E+01	GAS-1102	1.32E+02	5.29E+00	7.36E+02
CS-137	0.55	103.38%	11.41%	100.00%	4.00%	8.04E+01	3.22E+00	8.31E+01	9.48E+00	GAS-1102	8.04E+01	3.22E+00	7.36E+02

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

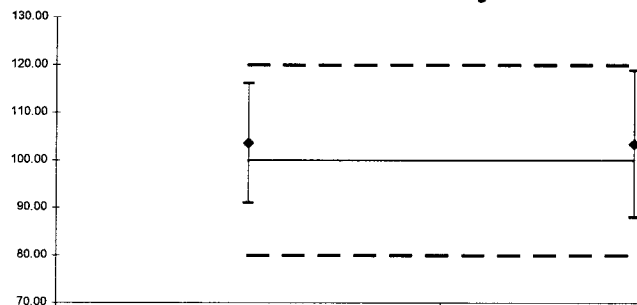
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
BI-214	0.05	0.28	1.08E+02	8.66E+00	1.08E+02	8.68E+00	1.04	OK	OK	<CS-137	BI-214>	NA	
K-40	0.97	13.62	1.93E+01	4.08E+00	2.21E+01	3.97E+00	1.03	OK	OK	<CO-60	K-40>	NA	OK
PB-214	0.04	0.36	1.09E+02	1.37E+01	1.10E+02	1.37E+01					PB-214>	NA	OK

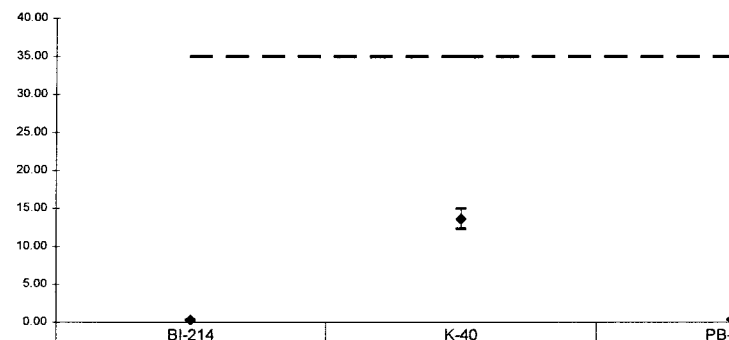
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
13-03013	Gamma	1	pCi	g	Weston Solutions, Inc.

LCS % Recovery



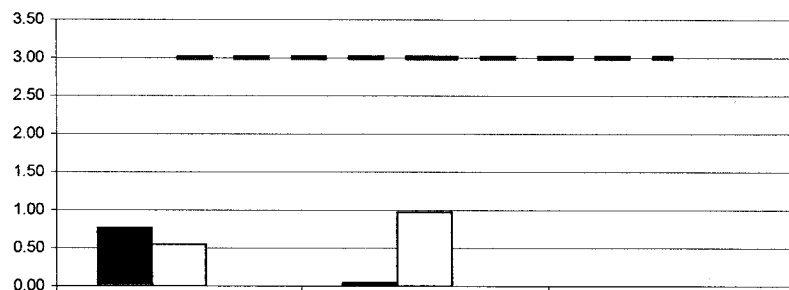
	CO-60	CS-137
Lower Error	91.04	87.97
Upper Error	116.15	118.79
%R	103.59	103.38
LCL	80	80
Mean	100	100
UCL	120	120

Replicate Sample RPD



	BI-214	K-40	PB-214
Lower Error	0.29	14.95	0.39
Upper Error	0.27	12.30	0.34
RPD	0.28	13.62	0.36
CL	35	35	35

Normalized Difference



	LCS ND	REP ND	MS ND
CO-60	0.76	0.05	0.00
CS-137	0.55	0.97	0.00
UCL	3	3	3

No Matrix Spike

SECTION VII
LABORATORY TECHNICIAN'S NOTES
&
RUN LOGS

GEI

3

DATE	Sample #	Client	Loadtime	CT Time	Analysis	Tech
4/11/17	CAS-1201	WST	0527	15m	✓	—
4/11/17	Daily Pneu	WST	0552	15m	✓	—
4/11/17	CAS-1201	WST	0617	15m	✓	—
4/11/17	CAS-1201	WST	0622	15m	✓	—
4/11/17	1707012-06	Weston Sol.	0652	2h	✓	—
4/11/17	1707012-08	Weston Sol.	0715	2h	✓	—
4/11/17	1707012-11	Weston Sol.	0859	2h	✓	—
4/11/17	1707012-15	Weston Sol.	1002	2h	✓	—
4/11/17	1707012-05	Weston Sol.	1107	2h	✓	—
4/11/17	1304002-03	Eden Foods	1204	1hr	✓	KB
4/11/17	1304002-04	Eden Foods	1705	1hr	✓	KB
4/11/17	1303013-01	Weston	1406	30mins	✓	KB
4/11/17	1303013-08	Weston	1438	1hr	✓	KB
4/11/17	1303013-09	Weston	1538	1hr	✓	KB
4/11/17	1303013-12	Weston	1640	1hr	✓	KB
4/11/17	1303013-14	Weston	1751	1hr	✓	KB
4/12/17	CAS-1201	WST	0508	15m	✓	—
4/12/17	Daily Pneu	WST	0571	15m	✓	—
4/12/17	CAS-1201	WST	0577	15m	✓	—
4/12/17	CAS-1201	WST	0618	15m	✓	—
4/12/17	Daily Pneu	WST	0640	15m	✓	—
4/12/17	1707017-16	Weston Sol.	0654	2h	✓	—
4/12/17	1707017-18	Weston Sol.	0700	2h	✓	—

GE 2

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DATE	SAMPLE #	Client	LoadTime	CtTime	Analysist	Tech
4/1/13	1304004-05	Eden Foods	1741	30 mins	✓	ICB
4/1/13	1304004-02	Eden Foods	1412	30 mins	✓	ICB
4/1/13	1303013-02	Weston	1443	1 hr	✓	ICB
4/1/13	1303013-10	Weston	1543	1 hr	✓	ICB
4/1/13	1303013-13	Weston	1644	1 hr	✓	ICB
4/1/13	1303115-02	UWOR	1745	4 hrs	✓	ICB
4/2/17	CAS-1202	W3	0510	15-	✓	—
4/2/17	EAS-1201	W3	0522	15-	✓	—
4/2/17	Daily 1200	W3	0587	15-	✓	—
4/2/17	CAL-1	W3	0609	15-	✓	—
4/2/17	1707017-15	Weston-61	0641	2L	✓	—
4/2/17	1707017-17	Weston-61	0747	2L	✓	—

DATE	Sample #	Client	Load Time	CT Time	Analysis	Tech
3/29/13	Daily Bkgd	Lab	0716	15min	Y	AG
3/29/13	GAS-1202	Lab	0747	15min	Y	AG
3/29/13	GAS-1201	Lab	0816	15 min	Y	AG
3/29/13	GAW-12	Lab	0836	15 min	Y	AG
3/29/13	1303011-09	Weston	0907	1hr	Y	KB
3/29/13	1303011-12	Weston	1009	1hr	Y	KB
3/29/13	1303011-15	Weston	1111	1hr	Y	KB
3/29/13	1303117-01	T&E	1212	30mins.	Y	KB
3/29/13	1303119-03	Hudson Ranch	1243	30 mins.	Y	KB
3/29/13	1303119-04	Hudson Ranch	1316	30 mins.	Y	KB
3/29/13	1303110-03	UCOR	1349	2 hrs	Y	KB
3/29/13	1303110-01	UCOR	1551	30mins	Y	KB
3/29/13	1303110-04	UCOR	1629	2 hrs	Y	KB
3/30/13	Chamber Bkgd	Lab	1713	24 hr	Y	KB
4/1/13	GAW-12	Lab	0724	1hr	✓	—
4/1/13	GAS-1202	Lab	0757	1hr	✓	—
4/1/13	GAS-1201	Lab	0844	1hr	✓	—
4/1/13	Daily Bkgd	Lab	0622	1hr	✓	—
4/1/13	1707012-08	Weston Sol.	0654	2hr	✓	—
4/1/13	1707012-11	Weston Sol.	0758	2hr	✓	—
4/1/13	1707012-14	Weston Sol.	0902	2hr	✓	—
4/1/13	1707012-02	Weston Sol.	1004	2hr	✓	—
4/1/13	1707012-06	Weston Sol.	1105	2hr	✓	—
4/1/13	1304002-01	Eden Foods	1233	30mins	Y	KB
4/1/13	1304004-01	Eden Foods	1308	30 mins	Y	KB
4/1/13	1304002-02	Eden Foods	1339	1hr	Y	KB
4/1/13	1303013-07	Weston	1440	1hr	Y	KB
4/1/13	1303013-11	Weston	1607	1hr	Y	KB
4/1/13	1303115-01	UCOR	1715	30 mins	Y	KB
4/1/13	1303115-03	UCOR	1750	4 hrs	Y	KB
4/2/13	GAW-12	Lab	0724	1hr	✓	—
4/2/13	GAS-1202	Lab	0757	1hr	✓	—
4/2/13	GAS-1201	Lab	0758	1hr	✓	—
4/2/13	Daily Bkgd	Lab	0618	1hr	✓	—

SECTION VIII
ANALYTICAL DATA (GAMMA SPECTROSCOPY)

13-03013

Gamma

Run 1

Work Order	13-03013	Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
Analysis Code	Gamma	01	LCS	LCS		03/05/13 00:00	1.0000E+00
Run	1	02	MBL	BLANK		03/05/13 00:00	1.0000E+00
Date Received	3/5/2013	03	DUP	MQZ-35-130303	55	03/03/13 00:00	5.0486E+02
Lab Deadline	3/28/2013	04	DO	MQZ-35-130303	55	03/03/13 00:00	5.0486E+02
Client	Weston Solutions, Inc.	05	TRG	MQZ-49-130303	50	03/03/13 00:00	5.1637E+02
Project	82148	06	TRG	MQZ-51-130303	60	03/03/13 00:00	5.7197E+02
Report Level	4	07	TRG	MQZ-51-2-130303	59	03/03/13 00:00	5.6926E+02
Activity Units	pCi	08	TRG	MQZ-52-130303	60	03/03/13 00:00	5.6137E+02
Aliquot Units	g	09	TRG	MQZ-61-130303	56	03/03/13 00:00	5.6574E+02
Matrix	SO	10	TRG	MQZ-62-130303	56	03/03/13 00:00	5.7171E+02
Method	LANL ER-130 Modified	11	TRG	MQZ-63-130303	53	03/03/13 00:00	5.3694E+02
Instrument Type	Gamma Spectroscopy	12	TRG	MQZ-64-130303	49	03/03/13 00:00	5.5962E+02
Radiometric Tracer		13	TRG	MQZ-65-130303	59	03/03/13 00:00	5.7210E+02
Radiometric Sol#		14	TRG	MQZ-66-130303	49	03/03/13 00:00	5.8640E+02
Tracer Act (dpm/g)		15	TRG	MQZ-BKGD-E-130303	52	03/03/13 00:00	5.5826E+02
Carrier		16	TRG	MQZ-BKGD-N-130303	57	03/03/13 00:00	4.7962E+02
Carrier Conc (mg/ml)		17	TRG	MQZ-BKGD-S-130303	48	03/03/13 00:00	5.9013E+02
		18	TRG	MQZ-BKGD-W-130303	53	03/03/13 00:00	6.0664E+02

13-03013

Gamma

Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS				0.00								
02	MBL				0.00								
03	DUP				0.00								
04	DO				0.00								
05	TRG				0.00								
06	TRG				0.00								
07	TRG				0.00								
08	TRG				0.00								
09	TRG				0.00								
10	TRG				0.00								
11	TRG				0.00								
12	TRG				0.00								
13	TRG				0.00								
14	TRG				0.00								
15	TRG				0.00								
16	TRG				0.00								
17	TRG				0.00								
18	TRG				0.00								

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS								
02	MBL								
03	DUP								
04	DO	03/06/13 08:22	KSALLINGS						
05	TRG	03/06/13 08:22	KSALLINGS						
06	TRG	03/06/13 08:22	KSALLINGS						
07	TRG	03/06/13 08:22	KSALLINGS						
08	TRG	03/06/13 08:22	KSALLINGS						
09	TRG	03/06/13 08:22	KSALLINGS						
10	TRG	03/06/13 08:22	KSALLINGS						
11	TRG	03/06/13 08:22	KSALLINGS						
12	TRG	03/06/13 08:22	KSALLINGS						
13	TRG	03/06/13 08:22	KSALLINGS						
14	TRG	03/06/13 08:22	KSALLINGS						
15	TRG	03/06/13 08:22	KSALLINGS						
16	TRG	03/06/13 08:22	KSALLINGS						
17	TRG	03/06/13 08:22	KSALLINGS						
18	TRG	03/06/13 08:22	KSALLINGS						

Preliminary Data Report & Analytical Calculations
Work Order: 13-03013-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
01	CO-60	LCS	LCS	pCi/g	1.37E+02	9.38E+00	5.95E-01	1.32E+02	103.59	OK		03/05/13 00:00	1.00E+00	04/01/13 14:06	YES
01	CS-137	LCS	LCS	pCi/g	8.31E+01	8.47E+00	4.73E-01	8.04E+01	103.38	OK		03/05/13 00:00	1.00E+00	04/01/13 14:06	YES
02	AC-228	MBL	BLANK	pCi/g	-2.32E-02	5.63E-02	1.00E-01					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	BI-214	MBL	BLANK	pCi/g	2.36E-02	3.99E-02	8.00E-02					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	K-40	MBL	BLANK	pCi/g	-1.19E-02	1.91E-01	4.18E-01					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	PA-234M	MBL	BLANK	pCi/g	9.89E-01	1.51E+00	3.37E+00					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	PB-212	MBL	BLANK	pCi/g	-2.77E-02	3.05E-02	5.05E-02					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	PB-214	MBL	BLANK	pCi/g	-4.77E-02	3.77E-02	6.09E-02					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	RA-226	MBL	BLANK	pCi/g	2.36E-02	3.99E-02	8.00E-02					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	TH-234	MBL	BLANK	pCi/g	-6.64E-02	3.28E-01	6.13E-01					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
02	TL-208	MBL	BLANK	pCi/g	-4.31E-02	4.90E-02	8.94E-02					03/05/13 00:00	1.00E+00	04/01/13 14:43	NO
03	AC-228	DUP	MQZ-35-130303	pCi/g	1.16E+00	9.21E-01	1.16E+00					03/03/13 00:00	5.05E+02	04/01/13 10:36	NO
03	BI-214	DUP	MQZ-35-130303	pCi/g	1.08E+02	6.68E+00	5.23E-01				NA	03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
03	K-40	DUP	MQZ-35-130303	pCi/g	2.21E+01	3.81E+00	2.89E+00				NA	03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
03	PA-234M	DUP	MQZ-35-130303	pCi/g	5.32E+01	3.09E+01	3.26E+01					03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
03	PB-210	DUP	MQZ-35-130303	pCi/g	3.91E+01	6.64E+00	7.50E+00					03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
03	PB-212	DUP	MQZ-35-130303	pCi/g	4.24E+00	7.53E-01	6.82E-01					03/03/13 00:00	5.05E+02	04/01/13 10:36	NO
03	PB-214	DUP	MQZ-35-130303	pCi/g	1.10E+02	1.25E+01	6.45E-01				NA	03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
03	RA-226	DUP	MQZ-35-130303	pCi/g	1.08E+02	6.68E+00	5.23E-01					03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
03	TH-234	DUP	MQZ-35-130303	pCi/g	5.33E+01	8.77E+00	8.52E+00					03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
03	TL-208	DUP	MQZ-35-130303	pCi/g	5.79E-01	5.32E-01	8.38E-01					03/03/13 00:00	5.05E+02	04/01/13 10:36	NO
03	U-235	DUP	MQZ-35-130303	pCi/g	4.94E+00	1.73E+00	2.48E+00					03/03/13 00:00	5.05E+02	04/01/13 10:36	YES
04	AC-228	DO	MQZ-35-130303	pCi/g	1.97E+00	7.00E-01	1.08E+00					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	BI-214	DO	MQZ-35-130303	pCi/g	1.08E+02	6.66E+00	5.28E-01					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	K-40	DO	MQZ-35-130303	pCi/g	1.93E+01	3.96E+00	3.06E+00					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	PA-234M	DO	MQZ-35-130303	pCi/g	6.60E+01	2.84E+01	3.18E+01					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	PB-210	DO	MQZ-35-130303	pCi/g	3.91E+01	6.63E+00	7.49E+00					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	PB-212	DO	MQZ-35-130303	pCi/g	4.04E+00	7.27E-01	6.82E-01					03/03/13 00:00	5.05E+02	04/01/13 11:36	NO
04	PB-214	DO	MQZ-35-130303	pCi/g	1.09E+02	1.25E+01	6.55E-01					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	RA-226	DO	MQZ-35-130303	pCi/g	1.08E+02	6.66E+00	5.28E-01					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	TH-234	DO	MQZ-35-130303	pCi/g	6.13E+01	8.38E+00	8.31E+00					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
04	TL-208	DO	MQZ-35-130303	pCi/g	5.85E-01	5.39E-01	8.47E-01					03/03/13 00:00	5.05E+02	04/01/13 11:36	NO
04	U-235	DO	MQZ-35-130303	pCi/g	5.60E+00	1.96E+00	2.47E+00					03/03/13 00:00	5.05E+02	04/01/13 11:36	YES
05	AC-228	TRG	MQZ-49-130303	pCi/g	8.63E-01	2.55E-01	3.58E-01					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	BI-214	TRG	MQZ-49-130303	pCi/g	1.38E+01	9.16E-01	1.97E-01					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	K-40	TRG	MQZ-49-130303	pCi/g	1.39E+01	2.15E+00	1.14E+00					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	PA-234M	TRG	MQZ-49-130303	pCi/g	1.25E+01	1.20E+01	1.18E+01					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	PB-210	TRG	MQZ-49-130303	pCi/g	8.15E+00	2.26E+00	2.29E+00					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES

Preliminary Data Report & Analytical Calculations
Work Order: 13-03013-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
05	PB-212	TRG	MQZ-49-130303	pCi/g	3.55E-01	1.20E-01	2.28E-01					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	PB-214	TRG	MQZ-49-130303	pCi/g	1.43E+01	2.37E+00	2.26E-01					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	RA-226	TRG	MQZ-49-130303	pCi/g	1.38E+01	9.16E-01	1.97E-01					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	TH-234	TRG	MQZ-49-130303	pCi/g	5.54E+00	3.09E+00	2.91E+00					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	TL-208	TRG	MQZ-49-130303	pCi/g	3.78E-01	1.31E-01	3.04E-01					03/03/13 00:00	5.16E+02	04/01/13 11:03	YES
05	U-235	TRG	MQZ-49-130303	pCi/g	1.37E+00	7.36E-01	9.59E-01					03/03/13 00:00	5.16E+02	04/01/13 11:03	NO
06	AC-228	TRG	MQZ-51-130303	pCi/g	7.17E-01	5.17E+00	6.04E+00					03/03/13 00:00	5.72E+02	04/01/13 11:05	NO
06	BI-214	TRG	MQZ-51-130303	pCi/g	2.50E+03	1.38E+02	2.86E+00					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
06	K-40	TRG	MQZ-51-130303	pCi/g	1.86E+01	1.23E+01	1.65E+01					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
06	PA-234M	TRG	MQZ-51-130303	pCi/g	1.11E+03	2.12E+02	1.76E+02					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
06	PB-210	TRG	MQZ-51-130303	pCi/g	1.05E+03	9.84E+01	2.71E+01					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
06	PB-212	TRG	MQZ-51-130303	pCi/g	8.12E+01	1.27E+01	3.38E+00					03/03/13 00:00	5.72E+02	04/01/13 11:05	NO
06	PB-214	TRG	MQZ-51-130303	pCi/g	2.41E+03	2.68E+02	3.52E+00					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
06	RA-226	TRG	MQZ-51-130303	pCi/g	2.50E+03	1.38E+02	2.86E+00					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
06	TH-234	TRG	MQZ-51-130303	pCi/g	5.28E+02	5.47E+01	3.55E+01					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
06	TL-208	TRG	MQZ-51-130303	pCi/g	1.19E+01	3.25E+00	4.49E+00					03/03/13 00:00	5.72E+02	04/01/13 11:05	NO
06	U-235	TRG	MQZ-51-130303	pCi/g	6.42E+01	1.17E+01	1.21E+01					03/03/13 00:00	5.72E+02	04/01/13 11:05	YES
07	AC-228	TRG	MQZ-51-2-130303	pCi/g	4.65E+00	4.14E+00	6.10E+00					03/03/13 00:00	5.69E+02	04/01/13 14:40	NO
07	BI-214	TRG	MQZ-51-2-130303	pCi/g	2.52E+03	1.39E+02	2.89E+00					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
07	K-40	TRG	MQZ-51-2-130303	pCi/g	1.73E+01	1.25E+01	1.68E+01					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
07	PA-234M	TRG	MQZ-51-2-130303	pCi/g	1.08E+03	1.90E+02	1.80E+02					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
07	PB-210	TRG	MQZ-51-2-130303	pCi/g	9.82E+02	9.16E+01	2.78E+01					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
07	PB-212	TRG	MQZ-51-2-130303	pCi/g	7.57E+01	1.19E+01	3.38E+00					03/03/13 00:00	5.69E+02	04/01/13 14:40	NO
07	PB-214	TRG	MQZ-51-2-130303	pCi/g	2.47E+03	2.75E+02	3.59E+00					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
07	RA-226	TRG	MQZ-51-2-130303	pCi/g	2.52E+03	1.39E+02	2.89E+00					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
07	TH-234	TRG	MQZ-51-2-130303	pCi/g	7.45E+02	7.15E+01	3.62E+01					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
07	TL-208	TRG	MQZ-51-2-130303	pCi/g	9.84E+00	3.18E+00	4.53E+00					03/03/13 00:00	5.69E+02	04/01/13 14:40	NO
07	U-235	TRG	MQZ-51-2-130303	pCi/g	8.25E+01	1.33E+01	1.24E+01					03/03/13 00:00	5.69E+02	04/01/13 14:40	YES
08	AC-228	TRG	MQZ-52-130303	pCi/g	1.24E-01	5.20E-01	7.97E-01					03/03/13 00:00	5.61E+02	04/01/13 14:38	NO
08	BI-214	TRG	MQZ-52-130303	pCi/g	6.74E+01	3.70E+00	3.69E-01					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
08	K-40	TRG	MQZ-52-130303	pCi/g	1.36E+01	2.65E+00	2.15E+00					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
08	PA-234M	TRG	MQZ-52-130303	pCi/g	2.65E+01	1.94E+01	2.28E+01					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
08	PB-210	TRG	MQZ-52-130303	pCi/g	3.79E+01	5.08E+00	4.40E+00					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
08	PB-212	TRG	MQZ-52-130303	pCi/g	1.13E+00	3.71E-01	4.52E-01					03/03/13 00:00	5.61E+02	04/01/13 14:38	NO
08	PB-214	TRG	MQZ-52-130303	pCi/g	6.73E+01	1.10E+01	4.63E-01					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
08	RA-226	TRG	MQZ-52-130303	pCi/g	6.74E+01	3.70E+00	3.69E-01					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
08	TH-234	TRG	MQZ-52-130303	pCi/g	2.36E+01	4.54E+00	5.59E+00					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
08	TL-208	TRG	MQZ-52-130303	pCi/g	3.89E-01	3.86E-01	6.11E-01					03/03/13 00:00	5.61E+02	04/01/13 14:38	NO

Preliminary Data Report & Analytical Calculations
Work Order: 13-03013-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
08	U-235	TRG	MQZ-62-130303	pCi/g	3.23E+00	1.44E+00	1.80E+00					03/03/13 00:00	5.61E+02	04/01/13 14:38	YES
09	AC-228	TRG	MQZ-61-130303	pCi/g	-1.57E-01	6.42E-01	1.08E+00					03/03/13 00:00	5.66E+02	04/01/13 15:38	NO
09	BI-214	TRG	MQZ-61-130303	pCi/g	1.32E+02	7.00E+00	5.24E-01					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	K-40	TRG	MQZ-61-130303	pCi/g	1.86E+01	3.51E+00	2.87E+00					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	PA-234M	TRG	MQZ-61-130303	pCi/g	1.34E+02	3.30E+01	3.05E+01					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	PB-210	TRG	MQZ-61-130303	pCi/g	6.14E+01	6.74E+00	6.26E+00					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	PB-212	TRG	MQZ-61-130303	pCi/g	7.73E-01	4.27E-01	5.59E-01					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	PB-214	TRG	MQZ-61-130303	pCi/g	1.30E+02	2.13E+01	6.60E-01					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	RA-226	TRG	MQZ-61-130303	pCi/g	1.32E+02	7.00E+00	5.24E-01					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	TH-234	TRG	MQZ-61-130303	pCi/g	1.05E+02	1.13E+01	8.13E+00					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
09	TL-208	TRG	MQZ-61-130303	pCi/g	7.70E-01	5.40E-01	8.45E-01					03/03/13 00:00	5.66E+02	04/01/13 15:38	NO
09	U-235	TRG	MQZ-61-130303	pCi/g	8.57E+00	1.96E+00	2.50E+00					03/03/13 00:00	5.66E+02	04/01/13 15:38	YES
10	AC-228	TRG	MQZ-62-130303	pCi/g	-4.96E-02	6.09E-01	1.02E+00					03/03/13 00:00	5.72E+02	04/01/13 15:43	NO
10	BI-214	TRG	MQZ-62-130303	pCi/g	1.02E+02	6.27E+00	4.79E-01					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
10	K-40	TRG	MQZ-62-130303	pCi/g	1.85E+01	3.52E+00	2.65E+00					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
10	PA-234M	TRG	MQZ-62-130303	pCi/g	3.90E+01	2.80E+01	2.88E+01					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
10	PB-210	TRG	MQZ-62-130303	pCi/g	5.98E+01	8.11E+00	6.38E+00					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
10	PB-212	TRG	MQZ-62-130303	pCi/g	3.33E+00	6.15E-01	6.07E-01					03/03/13 00:00	5.72E+02	04/01/13 15:43	NO
10	PB-214	TRG	MQZ-62-130303	pCi/g	1.02E+02	1.16E+01	5.92E-01					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
10	RA-226	TRG	MQZ-62-130303	pCi/g	1.02E+02	6.27E+00	4.79E-01					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
10	TH-234	TRG	MQZ-62-130303	pCi/g	3.37E+01	6.50E+00	7.67E+00					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
10	TL-208	TRG	MQZ-62-130303	pCi/g	6.54E-01	4.84E-01	7.62E-01					03/03/13 00:00	5.72E+02	04/01/13 15:43	NO
10	U-235	TRG	MQZ-62-130303	pCi/g	4.69E+00	1.45E+00	2.27E+00					03/03/13 00:00	5.72E+02	04/01/13 15:43	YES
11	AC-228	TRG	MQZ-63-130303	pCi/g	6.60E-01	1.78E+00	2.66E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	NO
11	BI-214	TRG	MQZ-63-130303	pCi/g	4.23E+02	2.37E+01	1.25E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
11	K-40	TRG	MQZ-63-130303	pCi/g	2.43E+01	7.91E+00	6.96E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
11	PA-234M	TRG	MQZ-63-130303	pCi/g	1.63E+03	2.13E+02	7.75E+01					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
11	PB-210	TRG	MQZ-63-130303	pCi/g	1.19E+02	1.44E+01	1.41E+01					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
11	PB-212	TRG	MQZ-63-130303	pCi/g	1.09E+01	1.89E+00	1.44E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	NO
11	PB-214	TRG	MQZ-63-130303	pCi/g	4.27E+02	4.75E+01	1.51E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
11	RA-226	TRG	MQZ-63-130303	pCi/g	4.23E+02	2.37E+01	1.25E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
11	TH-234	TRG	MQZ-63-130303	pCi/g	1.43E+03	1.25E+02	2.01E+01					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
11	TL-208	TRG	MQZ-63-130303	pCi/g	1.90E+00	1.33E+00	2.03E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	NO
11	U-235	TRG	MQZ-63-130303	pCi/g	9.85E+01	1.23E+01	5.68E+00					03/03/13 00:00	5.37E+02	04/01/13 16:08	YES
12	AC-228	TRG	MQZ-64-130303	pCi/g	3.26E-01	4.15E-01	7.21E-01					03/03/13 00:00	5.60E+02	04/01/13 16:40	NO
12	BI-214	TRG	MQZ-64-130303	pCi/g	4.66E+01	2.62E+00	3.18E-01					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
12	K-40	TRG	MQZ-64-130303	pCi/g	1.59E+01	2.85E+00	1.74E+00					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
12	PA-234M	TRG	MQZ-64-130303	pCi/g	2.41E+01	1.49E+01	1.92E+01					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES

Preliminary Data Report & Analytical Calculations
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
12	PB-210	TRG	MQZ-64-130303	pCi/g	2.76E+01	3.74E+00	4.08E+00					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
12	PB-212	TRG	MQZ-64-130303	pCi/g	7.27E-01	2.88E-01	3.41E-01					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
12	PB-214	TRG	MQZ-64-130303	pCi/g	4.59E+01	7.52E+00	3.97E-01					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
12	RA-226	TRG	MQZ-64-130303	pCi/g	4.66E+01	2.62E+00	3.18E-01					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
12	TH-234	TRG	MQZ-64-130303	pCi/g	2.16E+01	4.03E+00	5.01E+00					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
12	TL-208	TRG	MQZ-64-130303	pCi/g	5.29E-01	3.02E-01	5.35E-01					03/03/13 00:00	5.60E+02	04/01/13 16:40	NO
12	U-235	TRG	MQZ-64-130303	pCi/g	2.64E+00	2.66E+00	1.52E+00					03/03/13 00:00	5.60E+02	04/01/13 16:40	YES
13	AC-228	TRG	MQZ-65-130303	pCi/g	8.34E-01	6.10E-01	7.78E-01					03/03/13 00:00	5.72E+02	04/01/13 16:44	NO
13	BI-214	TRG	MQZ-65-130303	pCi/g	5.21E+01	3.00E+00	3.40E-01					03/03/13 00:00	5.72E+02	04/01/13 16:44	YES
13	K-40	TRG	MQZ-65-130303	pCi/g	1.41E+01	2.71E+00	1.98E+00					03/03/13 00:00	5.72E+02	04/01/13 16:44	YES
13	PA-234M	TRG	MQZ-65-130303	pCi/g	2.60E+00	1.32E+01	2.23E+01					03/03/13 00:00	5.72E+02	04/01/13 16:44	NO
13	PB-210	TRG	MQZ-65-130303	pCi/g	1.81E+01	3.97E+00	4.86E+00					03/03/13 00:00	5.72E+02	04/01/13 16:44	YES
13	PB-212	TRG	MQZ-65-130303	pCi/g	1.68E+00	3.61E-01	4.43E-01					03/03/13 00:00	5.72E+02	04/01/13 16:44	NO
13	PB-214	TRG	MQZ-65-130303	pCi/g	5.40E+01	6.17E+00	4.24E-01					03/03/13 00:00	5.72E+02	04/01/13 16:44	YES
13	RA-226	TRG	MQZ-65-130303	pCi/g	5.21E+01	3.00E+00	3.40E-01					03/03/13 00:00	5.72E+02	04/01/13 16:44	YES
13	TH-234	TRG	MQZ-65-130303	pCi/g	2.00E+01	4.53E+00	5.49E+00					03/03/13 00:00	5.72E+02	04/01/13 16:44	YES
13	TL-208	TRG	MQZ-65-130303	pCi/g	4.18E-01	3.33E-01	5.86E-01					03/03/13 00:00	5.72E+02	04/01/13 16:44	NO
13	U-235	TRG	MQZ-65-130303	pCi/g	2.23E+00	1.22E+00	1.72E+00					03/03/13 00:00	5.72E+02	04/01/13 16:44	NO
14	AC-228	TRG	MQZ-66-130303	pCi/g	4.62E-01	4.97E-01	8.57E-01					03/03/13 00:00	5.86E+02	04/01/13 17:51	NO
14	BI-214	TRG	MQZ-66-130303	pCi/g	8.30E+01	4.47E+00	3.94E-01					03/03/13 00:00	5.86E+02	04/01/13 17:51	YES
14	K-40	TRG	MQZ-66-130303	pCi/g	1.73E+01	3.26E+00	2.14E+00					03/03/13 00:00	5.86E+02	04/01/13 17:51	YES
14	PA-234M	TRG	MQZ-66-130303	pCi/g	4.70E+01	2.43E+01	2.36E+01					03/03/13 00:00	5.86E+02	04/01/13 17:51	YES
14	PB-210	TRG	MQZ-66-130303	pCi/g	5.19E+01	5.80E+00	5.02E+00					03/03/13 00:00	5.86E+02	04/01/13 17:51	YES
14	PB-212	TRG	MQZ-66-130303	pCi/g	1.75E+00	4.88E-01	4.93E-01					03/03/13 00:00	5.86E+02	04/01/13 17:51	NO
14	PB-214	TRG	MQZ-66-130303	pCi/g	8.28E+01	1.36E+01	4.98E-01					03/03/13 00:00	5.86E+02	04/01/13 17:51	YES
14	RA-226	TRG	MQZ-66-130303	pCi/g	8.30E+01	4.47E+00	3.94E-01					03/03/13 00:00	5.86E+02	04/01/13 17:51	YES
14	TH-234	TRG	MQZ-66-130303	pCi/g	1.38E+01	5.19E+00	6.10E+00					03/03/13 00:00	5.86E+02	04/01/13 17:51	YES
14	TL-208	TRG	MQZ-66-130303	pCi/g	5.28E-01	4.16E-01	6.56E-01					03/03/13 00:00	5.86E+02	04/01/13 17:51	NO
14	U-235	TRG	MQZ-66-130303	pCi/g	2.76E+00	1.60E+00	2.02E+00					03/03/13 00:00	5.86E+02	04/01/13 17:51	NO
15	AC-228	TRG	MQZ-BKGD-E-130303	pCi/g	6.16E-01	1.55E-01	2.32E-01					03/03/13 00:00	5.58E+02	04/02/13 06:41	YES
15	BI-214	TRG	MQZ-BKGD-E-130303	pCi/g	9.04E-01	1.46E-01	1.27E-01					03/03/13 00:00	5.58E+02	04/02/13 06:41	YES
15	K-40	TRG	MQZ-BKGD-E-130303	pCi/g	1.54E+01	2.04E+00	4.92E-01					03/03/13 00:00	5.58E+02	04/02/13 06:41	YES
15	PA-234M	TRG	MQZ-BKGD-E-130303	pCi/g	2.09E+00	3.36E+00	6.68E+00					03/03/13 00:00	5.58E+02	04/02/13 06:41	NO
15	PB-210	TRG	MQZ-BKGD-E-130303	pCi/g	7.72E-01	7.78E-01	1.41E+00					03/03/13 00:00	5.58E+02	04/02/13 06:41	NO
15	PB-212	TRG	MQZ-BKGD-E-130303	pCi/g	5.80E-01	1.27E-01	8.77E-02					03/03/13 00:00	5.58E+02	04/02/13 06:41	YES
15	PB-214	TRG	MQZ-BKGD-E-130303	pCi/g	8.75E-01	1.61E-01	1.19E-01					03/03/13 00:00	5.58E+02	04/02/13 06:41	YES
15	RA-226	TRG	MQZ-BKGD-E-130303	pCi/g	9.04E-01	1.46E-01	1.27E-01					03/03/13 00:00	5.58E+02	04/02/13 06:41	YES
15	TH-234	TRG	MQZ-BKGD-E-130303	pCi/g	2.41E-02	8.64E-01	1.50E+00					03/03/13 00:00	5.58E+02	04/02/13 06:41	NO

Preliminary Data Report & Analytical Calculations
Work Order: 13-03013-Gamma-1

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LSC Known	LCS %R	LCS Flag	RPD Flag	Sample Date	Sample Aliquot	Counting Date/Time	Identified
15	TL-208	TRG	MQZ-BKGD-E-130303	pCi/g	5.22E-01	1.82E-01	2.97E-01					03/03/13 00:00	5.58E+02	04/02/13 06:41	NO
15	U-235	TRG	MQZ-BKGD-E-130303	pCi/g	1.17E-01	2.41E-01	4.16E-01					03/03/13 00:00	5.58E+02	04/02/13 06:41	NO
16	AC-228	TRG	MQZ-BKGD-N-130303	pCi/g	1.25E+00	3.28E-01	5.30E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	NO
16	BI-214	TRG	MQZ-BKGD-N-130303	pCi/g	1.72E+00	2.18E-01	1.33E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	K-40	TRG	MQZ-BKGD-N-130303	pCi/g	2.46E+01	3.13E+00	6.88E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	PA-234M	TRG	MQZ-BKGD-N-130303	pCi/g	5.21E+00	5.86E+00	7.78E+00					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	PB-210	TRG	MQZ-BKGD-N-130303	pCi/g	1.87E+00	1.09E+00	1.36E+00					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	PB-212	TRG	MQZ-BKGD-N-130303	pCi/g	1.70E+00	3.81E-01	1.26E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	PB-214	TRG	MQZ-BKGD-N-130303	pCi/g	1.94E+00	3.58E-01	1.42E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	RA-226	TRG	MQZ-BKGD-N-130303	pCi/g	1.72E+00	2.18E-01	1.33E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	TH-234	TRG	MQZ-BKGD-N-130303	pCi/g	2.06E+00	1.16E+00	1.93E+00					03/03/13 00:00	4.80E+02	04/02/13 06:58	NO
16	TL-208	TRG	MQZ-BKGD-N-130303	pCi/g	1.28E+00	2.03E-01	2.08E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	YES
16	U-235	TRG	MQZ-BKGD-N-130303	pCi/g	-9.31E-02	3.20E-01	5.21E-01					03/03/13 00:00	4.80E+02	04/02/13 06:58	NO
17	AC-228	TRG	MQZ-BKGD-S-130303	pCi/g	4.53E-01	1.73E-01	3.03E-01					03/03/13 00:00	5.90E+02	04/02/13 07:47	NO
17	BI-214	TRG	MQZ-BKGD-S-130303	pCi/g	2.58E-01	8.80E-02	9.60E-02					03/03/13 00:00	5.90E+02	04/02/13 07:47	YES
17	K-40	TRG	MQZ-BKGD-S-130303	pCi/g	9.47E+00	1.38E+00	4.24E-01					03/03/13 00:00	5.90E+02	04/02/13 07:47	YES
17	PA-234M	TRG	MQZ-BKGD-S-130303	pCi/g	1.34E+00	3.15E+00	6.14E+00					03/03/13 00:00	5.90E+02	04/02/13 07:47	NO
17	PB-210	TRG	MQZ-BKGD-S-130303	pCi/g	5.50E-01	6.82E-01	9.42E-01					03/03/13 00:00	5.90E+02	04/02/13 07:47	YES
17	PB-212	TRG	MQZ-BKGD-S-130303	pCi/g	2.83E-01	7.62E-02	7.72E-02					03/03/13 00:00	5.90E+02	04/02/13 07:47	YES
17	PB-214	TRG	MQZ-BKGD-S-130303	pCi/g	2.76E-01	9.72E-02	9.73E-02					03/03/13 00:00	5.90E+02	04/02/13 07:47	YES
17	RA-226	TRG	MQZ-BKGD-S-130303	pCi/g	2.58E-01	8.80E-02	9.60E-02					03/03/13 00:00	5.90E+02	04/02/13 07:47	YES
17	TH-234	TRG	MQZ-BKGD-S-130303	pCi/g	2.35E-01	6.14E-01	1.11E+00					03/03/13 00:00	5.90E+02	04/02/13 07:47	NO
17	TL-208	TRG	MQZ-BKGD-S-130303	pCi/g	3.24E-01	1.66E-01	2.22E-01					03/03/13 00:00	5.90E+02	04/02/13 07:47	NO
17	U-235	TRG	MQZ-BKGD-S-130303	pCi/g	-5.61E-02	1.82E-01	3.09E-01					03/03/13 00:00	5.90E+02	04/02/13 07:47	NO
18	AC-228	TRG	MQZ-BKGD-W-130303	pCi/g	4.49E-01	1.88E-01	2.78E-01					03/03/13 00:00	6.07E+02	04/02/13 08:00	NO
18	BI-214	TRG	MQZ-BKGD-W-130303	pCi/g	3.03E-01	9.08E-02	8.27E-02					03/03/13 00:00	6.07E+02	04/02/13 08:00	YES
18	K-40	TRG	MQZ-BKGD-W-130303	pCi/g	1.01E+01	1.48E+00	4.29E-01					03/03/13 00:00	6.07E+02	04/02/13 08:00	YES
18	PA-234M	TRG	MQZ-BKGD-W-130303	pCi/g	1.17E+00	2.67E+00	5.32E+00					03/03/13 00:00	6.07E+02	04/02/13 08:00	NO
18	PB-210	TRG	MQZ-BKGD-W-130303	pCi/g	5.55E-01	4.89E-01	8.96E-01					03/03/13 00:00	6.07E+02	04/02/13 08:00	NO
18	PB-212	TRG	MQZ-BKGD-W-130303	pCi/g	3.01E-01	8.70E-02	6.41E-02					03/03/13 00:00	6.07E+02	04/02/13 08:00	YES
18	PB-214	TRG	MQZ-BKGD-W-130303	pCi/g	2.92E-01	9.22E-02	8.18E-02					03/03/13 00:00	6.07E+02	04/02/13 08:00	YES
18	RA-226	TRG	MQZ-BKGD-W-130303	pCi/g	3.03E-01	9.08E-02	8.27E-02					03/03/13 00:00	6.07E+02	04/02/13 08:00	YES
18	TH-234	TRG	MQZ-BKGD-W-130303	pCi/g	1.85E-01	5.37E-01	9.94E-01					03/03/13 00:00	6.07E+02	04/02/13 08:00	NO
18	TL-208	TRG	MQZ-BKGD-W-130303	pCi/g	2.56E-01	8.49E-02	1.15E-01					03/03/13 00:00	6.07E+02	04/02/13 08:00	YES
18	U-235	TRG	MQZ-BKGD-W-130303	pCi/g	-7.00E-03	1.58E-01	2.68E-01					03/03/13 00:00	6.07E+02	04/02/13 08:00	NO

501:2

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	03/05/13 00:00	1.0000				0.00		
02	MBL	BLANK	03/05/13 00:00	1.0000				0.00		
03	DUP	MQZ-35-130303	03/03/13 00:00	504.8600				0.00		
04	DO	MQZ-35-130303	03/03/13 00:00	504.8600				0.00		
05	TRG	MQZ-49-130303	03/03/13 00:00	516.3700				0.00		
06	TRG	MQZ-51-130303	03/03/13 00:00	571.9700				0.00		
07	TRG	MQZ-51-2-130303	03/03/13 00:00	569.2600				0.00		
08	TRG	MQZ-52-130303	03/03/13 00:00	561.3700				0.00		
09	TRG	MQZ-61-130303	03/03/13 00:00	565.7400				0.00		
10	TRG	MQZ-62-130303	03/03/13 00:00	571.7100				0.00		
11	TRG	MQZ-63-130303	03/03/13 00:00	536.9400				0.00		
12	TRG	MQZ-64-130303	03/03/13 00:00	559.6200				0.00		
13	TRG	MQZ-65-130303	03/03/13 00:00	572.1000				0.00		
14	TRG	MQZ-66-130303	03/03/13 00:00	586.4000				0.00		
15	TRG	MQZ-BKGD-E-130303	03/03/13 00:00	558.2600				0.00		
16	TRG	MQZ-BKGD-N-130303	03/03/13 00:00	479.6200				0.00		
17	TRG	MQZ-BKGD-S-130303	03/03/13 00:00	590.1300				0.00		
18	TRG	MQZ-BKGD-W-130303	03/03/13 00:00	606.6400				0.00		

Ge

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

GAS-1102

83913-416

Sand in 16 oz. PP Taral Jar Filled to Top

Customer: Eberline Services / Eberline Analytical Corp.

P.O. No.: 6705, Item 8

Reference Date: 01-Jan-2011 12:00 PM EST **Grams of Master Source:** 0.016810

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solutions. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 1, February, 1979, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST." EZA is accredited by the Health Physics Society (HPS) for the production of NIST-traceable sources, and this source was produced in accordance with the HPS accreditation requirements. Customers may report any concerns with the accreditation program to the HPS Secretariat, 1313 Dolley Madison Blvd., Ste. 402, McLean, VA 22101.

Nuclide	Gamma-Ray Energy (keV)	Half-Life, Days	Master Source* yps/gram	This Source yps	Uncertainty, %			Calibration Method
					u _A	u _B	U	
Am-241	59.5	1.580E+05	—	2.075E+03	0.1	1.7	3.5	4π LS
Cd-109	88.0	4.626E+02	1.697E+05	2.853E+03	0.8	2.3	4.9	HPGe
Co-57	122.1	2.718E+02	8.711E+04	1.464E+03	0.5	2.0	4.1	HPGe
Ce-139	165.9	1.376E+02	1.247E+05	2.096E+03	0.5	1.9	3.9	HPGe
Hg-203	279.2	4.661E+01	2.753E+05	4.628E+03	0.4	1.9	3.9	HPGe
Sn-113	391.7	1.151E+02	1.769E+05	2.974E+03	0.5	1.9	3.9	HPGe
Cs-137	661.7	1.098E+04	1.109E+05	1.864E+03	0.7	1.9	4.0	HPGe
Y-88	898.0	1.066E+02	4.224E+05	7.101E+03	0.5	1.9	3.9	HPGe
Co-60	1173.2	1.925E+03	2.142E+05	3.601E+03	0.6	1.9	4.0	HPGe
Co-60	1332.5	1.925E+03	2.143E+05	3.602E+03	0.6	1.9	4.0	HPGe
Y-88	1836.1	1.066E+02	4.472E+05	7.517E+03	0.5	1.9	3.9	HPGe

* Master Source refers to Analytics' 8-isotope mixture which is calibrated quarterly.

Calibration Methods: 4π LS - 4 pi Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber. **Uncertainty:** U - Relative expanded uncertainty, k = 2. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results."

(Certificate continued on reverse side)



Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
13-03013	1	Gamma	grams	3/28/2013	KSALLINGS

Lab Fraction	Weston Solutions, Inc. Client ID	Sample Type	Muffle Data	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	MQZ-35-130303	DUP					5.0486E+02	5.0486E+02				
04	MQZ-35-130303	DO					5.0486E+02	5.0486E+02				
05	MQZ-49-130303	TRG					5.1637E+02	5.1637E+02				
06	MQZ-51-130303	TRG					5.7197E+02	5.7197E+02				
07	MQZ-51-2-130303	TRG					5.6926E+02	5.6926E+02				
08	MQZ-52-130303	TRG					5.6137E+02	5.6137E+02				
09	MQZ-61-130303	TRG					5.6574E+02	5.6574E+02				
10	MQZ-62-130303	TRG					5.7171E+02	5.7171E+02				
11	MQZ-63-130303	TRG					5.3694E+02	5.3694E+02				
12	MQZ-64-130303	TRG					5.5962E+02	5.5962E+02				
13	MQZ-65-130303	TRG					5.7210E+02	5.7210E+02				
14	MQZ-66-130303	TRG					5.8640E+02	5.8640E+02				
15	MQZ-BKGD-E-130303	TRG					5.5826E+02	5.5826E+02				
16	MQZ-BKGD-N-130303	TRG					4.7962E+02	4.7962E+02				
17	MQZ-BKGD-S-130303	TRG					5.9013E+02	5.9013E+02				
18	MQZ-BKGD-W-130303	TRG					6.0664E+02	6.0664E+02				

Comments	
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Technician: Kerry Saei Date: 3/6/13

Rough Sample Preparation Log Book

Work Order	Lab Deadline	Date Received in Prep	Date Sealed	Date Returned	Technician
13-03013	3/28/2013	3/5/2013	3/6/2013	3/7/2013	KSALLINGS

Eberline	Weston Solutions, Inc.	Tare (g)	Gross (g)		Net (g)		Percent		Gamma		Special
Fraction	Client ID	Pan Wt	Wet Wt.	Dry Wt.	Wet Wt.	Dry Wt.	Liquid	Solid	Dry Wt.	LEPS Wt.	Info
04	MQZ-35-130303	13.7200	548.1000	534.0600	534.3800	520.3400	2.63%	97.37%	0.0000	0.0000	
05	MQZ-49-130303	13.6600	551.4900	543.3200	537.8300	529.6600	1.52%	98.48%	0.0000	0.0000	
06	MQZ-51-130303	13.6300	620.7400	604.1300	607.1100	590.5000	2.74%	97.26%	0.0000	0.0000	
07	MQZ-51-2-130303	13.5300	622.3600	603.5300	608.8300	590.0000	3.09%	96.91%	0.0000	0.0000	
08	MQZ-52-130303	13.4900	599.9300	591.3300	586.4400	577.8400	1.47%	98.53%	0.0000	0.0000	
09	MQZ-61-130303	13.8200	610.8100	598.7800	596.9900	584.9600	2.02%	97.98%	0.0000	0.0000	
10	MQZ-62-130303	13.7000	604.1400	596.0000	590.4400	582.3000	1.38%	98.62%	0.0000	0.0000	
11	MQZ-63-130303	13.7300	573.8300	562.0900	560.1000	548.3600	2.10%	97.90%	0.0000	0.0000	
12	MQZ-64-130303	13.6900	594.0400	588.5000	580.3500	574.8100	0.95%	99.05%	0.0000	0.0000	
13	MQZ-65-130303	13.7200	605.9100	598.2300	592.1900	584.5100	1.30%	98.70%	0.0000	0.0000	
14	MQZ-66-130303	13.7600	620.4000	613.3700	606.6400	599.6100	1.16%	98.84%	0.0000	0.0000	
15	MQZ-BKGD-E-130303	13.6800	593.4100	586.3700	579.7300	572.6900	1.21%	98.79%	0.0000	0.0000	
16	MQZ-BKGD-N-130303	13.4900	518.0400	505.5200	504.5500	492.0300	2.48%	97.52%	0.0000	0.0000	
17	MQZ-BKGD-S-130303	13.3900	648.3700	642.6500	634.9800	629.2600	0.90%	99.10%	0.0000	0.0000	
18	MQZ-BKGD-W-130303	13.4300	639.0900	635.5400	625.6600	622.1100	0.57%	99.43%	0.0000	0.0000	

Comments	
Special Codes	H: Hot, O: Organic Hazard, P: PCB Hazard, R: Rush, T: Other (see comments)

0041

Technician: Keny Sali

Date: Analysis: Rough Prep Logbook

Analysis: Gamma Page No. 8430

Sample ID : 1303013-01

Acquisition date : 1-APR-2013 14:06:44

VAX/VMS Peak Search Report Generated 1-APR-2013 14:37:34.97

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301301_GE1_GAS1202_190130.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : GAS 1102
 Deposition Date :
 Sample Date : 1-JAN-2011 00:00:00. Acquisition date : 1-APR-2013 14:06:44.
 Sample ID : 1303013-01 Sample Quantity : 7.36000E+02 gram
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE1 Detector Geometry: GAS-1202
 Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:27.29 1.5%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	31.86	2052	5929	1.41	32.09	30	6	12.6		
1	49.91	5990	10786	1.56	50.14	45	19	6.4	5.62E+03	TH-230
1	53.77*	5244	8364	1.42	54.00	45	19	6.5		
1	59.68	91691	8746	1.57	59.91	45	19	0.8		AM-241
0	66.94*	1173	13693	3.21	67.17	64	7	33.5		TH-230
0	87.96*	45823	13458	1.39	88.19	84	8	1.3		NP-237
										SN-126
										CD-109
0	121.99	9447	8822	1.48	122.22	118	9	4.1		CO-57
0	128.63	228	5374	3.19	128.86	127	6	102.6		
0	136.20	1079	6969	1.51	136.43	133	8	27.5		CO-57
0	143.09*	246	4973	3.90	143.31	141	6	91.8		
0	165.83	1437	4744	1.24	166.05	163	6	16.1		CE-139
0	238.61*	268	3800	1.75	238.83	237	5	70.3		PB-212
0	262.94	168	3870	1.37	263.16	260	6	118.3		
0	309.19	193	3852	3.20	309.41	306	7	107.7		
0	391.34	440	3526	1.23	391.55	389	7	45.8		SN-113
0	430.82	144	2846	2.22	431.03	429	6	118.7		
0	441.34	155	2904	1.96	441.55	440	6	111.1		
0	634.20	171	1568	4.73	634.39	632	6	75.0		
0	661.59*	31285	2744	1.66	661.78	657	10	1.3		CS-137
0	898.03*	364	1957	1.80	898.20	895	6	39.8		Y-88
2	1168.26	43	266	2.07	1168.41	1167	13	93.5	1.79E+00	
2	1173.20*	29619	707	1.89	1173.35	1167	13	1.2		CO-60
0	1316.78	49	265	4.11	1316.92	1314	8	119.2		
0	1332.47	27124	368	2.15	1332.61	1327	12	1.2		CO-60
0	1433.11	64	152	10.10	1433.24	1424	15	89.2		
0	1468.20	24	73	3.44	1468.34	1466	6	121.1		
0	1601.20	33	96	6.90	1601.32	1596	11	120.1		
0	1667.39	32	34	3.15	1667.51	1664	7	70.6		
0	1723.51	25	37	3.66	1723.63	1721	6	85.8		
0	1792.72	19	44	2.88	1792.83	1790	7	124.4		
0	1835.90	294	77	2.28	1836.00	1829	14	17.2		Y-88
0	1991.38	35	28	5.33	1991.48	1987	9	64.1		
0	2004.74	29	43	2.22	2004.84	2000	11	96.5		
0	2014.63	18	35	3.12	2014.73	2011	8	119.3		

AG
4/2/13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	2118.80*	14	9	1.34	2118.89	2117	5	84.9		
0	2209.66	18	27	1.80	2209.75	2207	7	105.6		
0	2308.03	16	14	1.50	2308.10	2305	8	92.5		
0	2505.31	432	10	2.36	2505.37	2500	10	10.0		
0	2614.24*	32	2	1.97	2614.29	2610	9	40.8		
0	2733.99	5	1	1.44	2734.03	2730	6	118.9		

Total number of lines in spectrum 40
Number of unidentified lines 22
Number of lines tentatively identified by NID 18 45.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	8.18	7.973E+00	6.525E+01	0.755E+01	11.57	
Y-88	106.60D	209.	1.309E+00	2.736E+02	0.492E+02	18.00	
CD-109	464.00D	3.41	8.484E+02	2.895E+03	0.349E+03	12.04	
SN-113	115.10D	141.	9.528E-01	1.342E+02	0.635E+02	47.33	
SN-126	1.00E+05Y	1.00	8.528E+01	8.528E+01	0.890E+01	10.43	
CS-137	30.17Y	1.05	7.894E+01	8.313E+01	0.847E+01	10.19	
CE-139	137.66D	62.6	1.456E+00	9.116E+01	1.725E+01	18.92	
NP-237	2.14E+06Y	1.00	2.503E+02	2.503E+02	0.259E+02	10.34	
Total Activity :			1.275E+03	3.878E+03			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.34	1.019E+02	1.370E+02	0.094E+02	6.85	
TH-230	7.70E+04Y	1.00	2.750E+01	2.750E+01	0.303E+01	11.03	
Total Activity :			1.294E+02	1.645E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
PB-212	1.41E+10Y	1.00	5.956E-01	5.956E-01	4.394E-01	73.76	
AM-241	432.20Y	1.00	1.836E+02	1.842E+02	0.152E+02	8.24	
Total Activity :			1.841E+02	1.848E+02			

Grand Total Activity : 1.588E+03 4.227E+03

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CO-57	122.06	85.51*	2.806E+00	8.033E+00	6.574E+01	12.55	OK
	136.48	10.60	2.710E+00	7.661E+00	6.270E+01	29.92	OK

Final Mean for 2 Valid Peaks = 6.525E+01+/- 7.552E+00 (11.57%)

Y-88	898.02	93.40	7.378E-01	1.078E+00	2.253E+02	40.96	OK
	1836.01	99.38*	4.304E-01	1.401E+00	2.929E+02	19.88	OK

Final Mean for 2 Valid Peaks = 2.736E+02+/- 4.925E+01 (18.00%)

CD-109	88.03	3.72*	2.962E+00	8.484E+02	2.895E+03	12.04	OK
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Final Mean for 1 Valid Peaks = 2.895E+03+/- 3.486E+02 (12.04%)

SN-113	255.12	1.93	1.972E+00	-----	Line Not Found	-----	Absent
	391.69	64.90*	1.452E+00	9.528E-01	1.342E+02	47.33	OK

Final Mean for 1 Valid Peaks = 1.342E+02+/- 6.353E+01 (47.33%)

SN-126	87.57	37.00*	2.963E+00	8.528E+01	8.528E+01	10.43	OK
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Final Mean for 1 Valid Peaks = 8.528E+01+/- 8.898E+00 (10.43%)

CS-137	661.65	85.12*	9.499E-01	7.894E+01	8.313E+01	10.19	OK
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Final Mean for 1 Valid Peaks = 8.313E+01+/- 8.468E+00 (10.19%)

CE-139	165.85	80.35*	2.506E+00	1.456E+00	9.116E+01	18.92	OK
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Final Mean for 1 Valid Peaks = 9.116E+01+/- 1.725E+01 (18.92%)

NP-237	86.50	12.60*	2.964E+00	2.503E+02	2.503E+02	10.34	OK
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Final Mean for 1 Valid Peaks = 2.503E+02+/- 2.587E+01 (10.34%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CO-60	1173.22	100.00*	5.955E-01	1.015E+02	1.364E+02	9.20	OK
	1332.49	100.00	5.401E-01	1.025E+02	1.377E+02	10.26	OK

Final Mean for 2 Valid Peaks = 1.370E+02+/- 9.380E+00 (6.85%)

TH-230	48.44	16.90	2.629E+00	2.750E+01	2.750E+01	11.03	OK
	62.85	4.60	2.878E+00	-----	Line Not Found	-----	Absent
	67.67	0.37*	2.919E+00	2.215E+02	2.215E+02	34.58	<<WM N-Sigma

Final Mean for 1 Valid Peaks = 2.750E+01+/- 3.034E+00 (11.03%)

Sample ID : 1303013-01

Acquisition date : 1-APR-2013 14:06:44

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
PB-212	238.63	44.60*	2.057E+00	5.956E-01	5.956E-01	73.76	OK
	300.09	3.41	1.767E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 5.956E-01+/- 4.394E-01 (73.76%)

AM-241	59.54	35.90*	2.839E+00	1.836E+02	1.842E+02	8.24	OK
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Final Mean for 1 Valid Peaks = 1.842E+02+/- 1.518E+01 (8.24%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
CO-57	6.525E+01	7.552E+00	2.216E+00	2.471E-01	29.445
CO-60	1.370E+02	9.380E+00	5.951E-01	4.877E-02	230.192
Y-88	2.736E+02	4.925E+01	3.742E+01	3.402E+00	7.313
CD-109	2.895E+03	3.486E+02	2.561E+01	2.891E+00	113.022
SN-113	1.342E+02	6.353E+01	7.295E+01	8.110E+00	1.840
SN-126	8.528E+01	8.898E+00	7.544E-01	7.205E-02	113.044
CS-137	8.313E+01	8.468E+00	4.727E-01	4.386E-02	175.867
CE-139	9.116E+01	1.725E+01	1.824E+01	1.671E+00	4.998
PB-212	5.956E-01	4.394E-01	6.342E-01	1.397E-01	0.939
TH-230	2.750E+01	3.034E+00	8.190E+01	6.352E+00	0.336
NP-237	2.503E+02	2.587E+01	2.213E+00	2.090E-01	113.095
AM-241	1.842E+02	1.518E+01	8.557E-01	6.128E-02	215.283

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
NA-22	-4.812E-02		2.992E-01	5.015E-01	4.482E-02	-0.096
AL-26	7.035E-03		9.566E-02	1.668E-01	1.524E-02	0.042
K-40	-2.845E-01		1.162E+00	1.756E+00	1.697E-01	-0.162
TI-44	8.894E-01	+	3.076E-01	3.521E-01	2.736E-02	2.526
MN-54	-7.229E-01		1.799E+00	3.008E+00	2.712E-01	-0.240
ZN-65	1.015E+01		7.110E+00	1.205E+01	1.014E+00	0.843
SE-75	2.647E+01		3.804E+01	5.474E+01	1.518E+01	0.484
KR-85	1.034E+01		5.720E+01	9.828E+01	1.042E+01	0.105
NB-93M	-3.812E+02		9.373E+01	2.494E+00	6.034E-01	-152.870
NB-94	-1.866E-01		3.097E-01	5.145E-01	4.553E-02	-0.363
RU-106	-4.209E+00		1.052E+01	1.779E+01	2.519E+00	-0.237
AG-108M	1.874E-01		2.662E-01	4.563E-01	4.231E-02	0.411
AG-110M	5.790E+01		6.859E+00	6.756E+00	6.294E-01	8.571
TE123M	1.788E+00		2.191E+01	3.229E+01	3.067E+00	0.055
SB-125	6.646E-01		1.368E+00	2.137E+00	2.342E-01	0.311
I-129	-2.120E+01		2.554E+00	6.094E-01	6.692E-02	-34.783
BA-133	-1.781E-02		3.524E-01	6.098E-01	1.281E-01	-0.029
CS-134	6.909E-02		4.752E-01	8.130E-01	8.114E-02	0.085
CS-135	1.792E-01		1.217E+00	1.765E+00	5.036E-01	0.102
LA-138	4.656E-02		1.740E-01	2.748E-01	2.592E-02	0.169
CE-144	1.213E+01		1.194E+01	1.568E+01	1.665E+00	0.774
PM-144	-3.772E-01		1.104E+00	1.862E+00	2.840E-01	-0.203
PM-145	-2.685E+00		2.045E+00	1.539E+00	1.005E+00	-1.745
PM-146	-6.688E-02		7.415E-01	1.273E+00	1.366E-01	-0.053
EU-152	2.215E-01		8.712E-01	1.516E+00	1.753E-01	0.146
GD-153	4.029E+00		6.671E+00	1.081E+01	1.100E+00	0.373
EU-154	1.102E-01		5.438E-01	9.269E-01	8.282E-02	0.119
EU-155	1.398E+02	+	1.445E+01	3.075E+00	2.903E-01	45.458
HO-166M	2.023E-01		4.360E-01	7.455E-01	6.917E-02	0.271
HF-172	9.549E-01		3.492E+00	4.555E+00	4.985E-01	0.210
LU-173	1.629E+00		2.688E+00	4.202E+00	1.237E+00	0.388

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
LU-176	2.104E-01		2.191E-01	3.106E-01	8.463E-02	0.677
TA-182	-1.629E+02		1.376E+02	2.223E+02	1.863E+01	-0.733
BI-207	1.212E-01		2.218E-01	3.822E-01	3.926E-02	0.317
TL-208	8.831E-02		7.188E-01	1.231E+00	1.251E-01	0.072
BI-210M	3.935E-01	+	4.777E-01	6.330E-01	1.715E-01	0.622
PB-210	9.607E+01		1.055E+01	1.064E+01	8.396E-01	9.025
PB-211	-4.718E-01		6.871E+00	1.184E+01	1.261E+00	-0.040
BI-212	1.560E-01		2.021E+00	3.433E+00	3.182E-01	0.045
BI-214	-1.349E-01		4.757E-01	8.083E-01	8.007E-02	-0.167
PB-214	6.156E-01		5.005E-01	8.543E-01	1.648E-01	0.721
RN-219	6.365E-01		3.034E+00	5.247E+00	5.580E-01	0.121
RA-223	-1.004E+00		4.392E+00	7.594E+00	1.858E+00	-0.132
RA-224	4.966E+00		5.067E+00	7.293E+00	1.642E+00	0.681
RA-226	5.433E+00		1.110E+01	7.889E+00	1.446E+01	0.689
TH-227	1.413E-01		1.721E+00	2.505E+00	5.380E-01	0.056
AC-228	1.456E+00		1.254E+00	2.127E+00	1.852E-01	0.685
PA-231	-3.435E+00		8.676E+00	1.235E+01	3.441E+00	-0.278
TH-231	-1.057E+03		1.431E+02	8.512E+00	1.098E+00	-124.201
PA-234	5.560E-01		8.412E-01	1.102E+00	1.181E-01	0.505
PA-234M	-1.971E+00		3.749E+01	6.261E+01	5.418E+00	-0.031
TH-234	1.092E+01		5.671E+00	7.601E+00	5.642E-01	1.437
U-235	1.796E+00	+	1.683E+00	2.167E+00	3.970E-01	0.829
AM-243	-1.932E-01		2.957E-01	4.753E-01	3.962E-02	-0.406
CM-243	6.855E-01		1.369E+00	2.145E+00	6.593E-01	0.320

Total number of lines in spectrum 40
Number of unidentified lines 22
Number of lines tentatively identified by NID 18 45.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	8.18	7.973E+00	6.525E+01	0.755E+01	11.57	
Y-88	106.60D	209.	1.309E+00	2.736E+02	0.492E+02	18.00	
CD-109	464.00D	3.41	8.484E+02	2.895E+03	0.349E+03	12.04	
SN-113	115.10D	141.	9.528E-01	1.342E+02	0.635E+02	47.33	
SN-126	1.00E+05Y	1.00	8.528E+01	8.528E+01	0.890E+01	10.43	
CS-137	30.17Y	1.05	7.894E+01	8.313E+01	0.847E+01	10.19	
CE-139	137.66D	62.6	1.456E+00	9.116E+01	1.725E+01	18.92	
NP-237	2.14E+06Y	1.00	2.503E+02	2.503E+02	0.259E+02	10.34	
Total Activity :			1.275E+03	3.878E+03			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.34	1.019E+02	1.370E+02	0.094E+02	6.85	
TH-230	7.70E+04Y	1.00	2.750E+01	2.750E+01	0.303E+01	11.03	
Total Activity :			1.294E+02	1.645E+02			

Nuclide Type : NATURAL

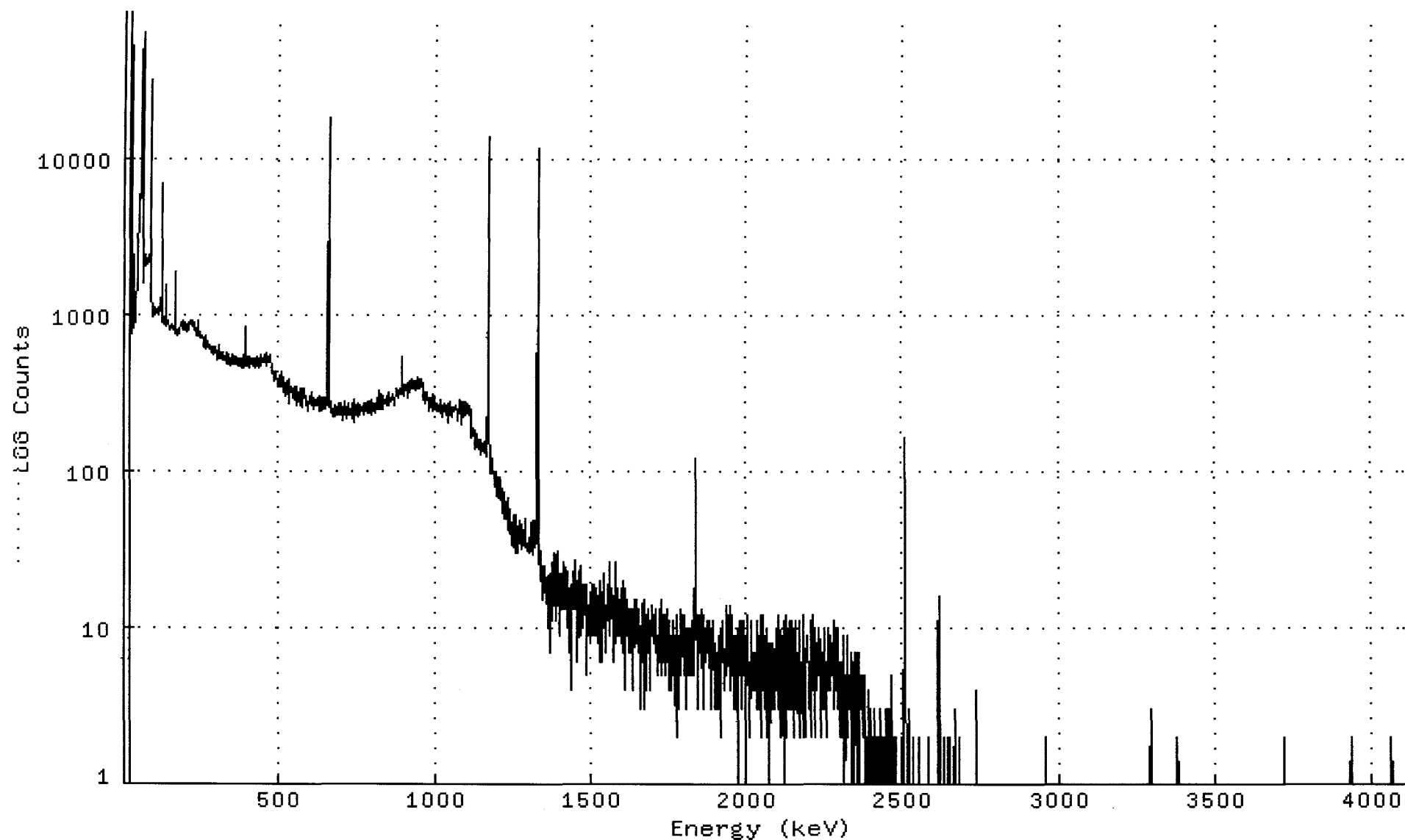
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
PB-212	1.41E+10Y	1.00	5.956E-01	5.956E-01	4.394E-01	73.76	
AM-241	432.20Y	1.00	1.836E+02	1.842E+02	0.152E+02	8.24	
Total Activity :			1.841E+02	1.848E+02			

Grand Total Activity : 1.588E+03 4.227E+03

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301301_GE1_GAS1202_190130.CNF;1
Title :
Sample Title: GAS 1102
Start Time: 1-APR-2013 14:06: Sample Time: 1-JAN-2011 00:00: Energy Offset: -2.35223E-01
Real Time : 0 00:30:27.29 Sample ID : 1303013-01 Energy Slope : 1.00007E+00
Live Time : 0 00:30:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301301_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	1	4	1010	2693	10831	87856	30506	5691
25:	28406	8834	1559	748	852	841	1007	2428
33:	1661	1151	893	1285	1339	1221	1158	1308
41:	1470	1702	1929	2215	2256	2560	2952	3751
49:	5082	5872	5203	5194	5249	5567	5555	5888
57:	6113	6860	37973	62728	3989	1598	1579	1652
65:	1871	2169	2276	2393	2219	2289	2194	2187
73:	2155	2114	2230	2119	2246	2278	2177	2207
81:	2183	2348	2395	2356	2548	2672	4415	31364
89:	13601	1264	1064	999	1072	1078	1066	967
97:	981	1074	1082	1038	1027	1114	1074	1064
105:	1058	1037	1035	1027	1053	993	1052	1031
113:	1115	1077	1031	1059	1055	1059	1106	1099
121:	1454	6957	3828	921	956	889	946	946
129:	969	963	912	866	895	920	902	1203
137:	1526	902	848	852	876	911	877	893
145:	853	819	790	836	844	840	843	855
153:	806	861	870	829	823	830	843	835
161:	840	830	796	776	998	1856	996	759
169:	788	772	797	764	771	783	734	752
177:	761	749	773	788	792	806	833	827
185:	843	877	887	893	879	789	853	887
193:	834	914	860	854	870	791	829	826
201:	774	859	788	797	829	779	837	795
209:	812	836	831	874	897	888	912	918
217:	871	885	890	882	916	891	857	826
225:	850	823	873	828	858	800	830	795
233:	800	737	807	811	769	867	922	784
241:	736	745	771	756	761	719	752	703
249:	714	700	728	705	711	722	717	715
257:	674	614	697	668	682	657	733	667
265:	631	606	646	652	634	666	666	659
273:	633	624	620	622	595	640	633	624
281:	561	605	618	599	585	572	597	626
289:	592	623	571	558	618	575	608	599
297:	588	598	553	585	578	552	514	525
305:	553	525	572	604	569	634	574	567
313:	551	564	538	519	545	520	543	549
321:	544	507	573	510	527	520	540	519
329:	518	533	522	480	514	569	540	541
337:	560	513	506	516	484	521	475	509
345:	474	500	488	485	485	534	540	542
353:	522	548	521	510	512	522	487	522
361:	516	486	513	538	479	527	465	523
369:	525	479	484	473	480	504	464	527
377:	520	517	459	476	468	519	478	510
385:	459	490	497	512	531	521	582	844
393:	550	472	466	516	476	534	484	507
401:	483	506	468	520	538	481	487	456
409:	506	488	530	505	507	515	483	473
417:	530	505	485	518	504	488	469	461
425:	519	490	479	484	466	520	540	507

433:	502	455	493	499	518	505	473	495
441:	553	524	511	514	462	506	510	495
449:	514	521	502	495	510	495	544	513
457:	488	555	467	525	526	489	569	516
465:	543	537	539	498	518	513	553	499
473:	501	501	499	531	447	462	449	469
481:	459	424	434	421	388	370	380	417
489:	387	424	425	394	415	394	389	363
497:	373	355	342	371	382	349	392	404
505:	384	349	371	345	372	415	429	385
513:	425	363	401	321	367	318	341	369
521:	304	362	328	347	348	347	335	344
529:	305	315	378	315	315	383	332	299
537:	270	302	341	345	315	318	329	325
545:	307	333	290	293	328	321	315	347
553:	286	319	296	337	288	297	310	265
561:	313	341	296	295	273	298	281	274
569:	292	296	274	333	294	263	265	295
577:	253	307	293	337	263	315	334	294
585:	317	311	299	297	283	279	285	273
593:	278	244	264	275	270	278	258	277
601:	270	268	298	293	294	294	264	285
609:	315	300	286	246	279	290	288	268
617:	275	295	281	268	273	282	273	259
625:	263	265	275	295	275	278	243	281
633:	301	294	293	292	278	244	292	292
641:	289	274	264	267	282	276	293	251
649:	282	245	275	288	291	274	264	261
657:	314	309	294	895	9497	17897	3932	366
665:	263	265	260	244	234	240	247	278
673:	243	246	241	251	220	250	247	235
681:	255	223	259	248	232	253	228	248
689:	242	230	248	257	228	250	226	227
697:	266	232	230	232	234	265	266	211
705:	234	252	230	242	238	242	245	261
713:	276	231	226	231	234	255	217	239
721:	255	241	257	231	266	234	238	240
729:	229	250	251	236	229	235	246	240
737:	233	216	259	272	268	249	249	248
745:	283	206	242	246	243	249	263	256
753:	238	224	225	266	221	231	253	263
761:	253	241	249	264	230	243	239	242
769:	255	246	239	242	266	249	252	228
777:	232	270	262	248	246	268	241	235
785:	247	232	279	236	244	234	247	252
793:	254	256	256	276	226	287	265	283
801:	282	283	260	259	248	244	272	246
809:	272	271	242	250	251	233	261	269
817:	249	264	294	257	294	326	286	264
825:	257	246	249	267	308	294	278	298
833:	251	302	274	263	271	247	258	271
841:	271	287	270	268	275	295	284	263
849:	285	294	298	290	285	306	301	265
857:	314	277	291	283	284	282	285	307
865:	286	288	293	289	295	273	293	265
873:	283	280	291	303	301	305	298	340
881:	326	315	301	324	306	298	320	294
889:	307	308	306	311	334	328	312	330
897:	361	538	475	306	356	340	340	325
905:	298	321	327	332	324	340	352	337

913:	361	334	353	291	308	329	350	320
921:	319	331	330	378	355	338	378	371
929:	348	381	333	358	348	352	372	365
937:	339	348	331	362	342	359	376	348
945:	353	399	346	352	333	337	388	371
953:	344	370	386	359	344	387	356	353
961:	362	360	351	357	303	312	283	322
969:	316	292	279	312	288	266	295	300
977:	284	298	282	314	280	282	259	267
985:	274	242	254	286	252	289	294	255
993:	244	280	284	291	306	255	247	304
1001:	284	262	299	249	238	272	261	252
1009:	262	261	242	262	264	240	250	254
1017:	255	274	244	283	237	249	253	244
1025:	223	255	261	241	260	260	250	240
1033:	271	252	247	250	230	236	249	262
1041:	251	269	231	205	265	247	212	251
1049:	278	234	232	226	244	239	233	258
1057:	256	221	234	247	243	252	253	250
1065:	244	245	259	251	259	249	249	254
1073:	233	244	236	210	249	234	238	247
1081:	267	285	234	253	240	254	240	234
1089:	278	198	244	269	251	237	276	249
1097:	226	247	239	272	243	254	273	270
1105:	236	259	236	245	254	231	239	246
1113:	265	225	251	251	242	220	216	231
1121:	163	185	189	169	180	168	179	175
1129:	167	173	161	182	137	144	152	155
1137:	173	147	160	157	140	146	161	140
1145:	148	145	139	158	139	126	152	126
1153:	151	150	144	138	135	146	140	155
1161:	133	148	131	130	125	138	128	157
1169:	145	134	376	3663	13591	10789	1840	182
1177:	117	123	96	120	109	102	102	109
1185:	99	97	122	101	100	90	94	80
1193:	87	98	83	80	75	69	97	98
1201:	75	91	67	70	78	83	77	85
1209:	91	76	75	82	65	64	61	78
1217:	54	62	70	59	59	59	50	54
1225:	74	50	62	63	57	56	61	53
1233:	55	58	42	48	47	68	49	44
1241:	46	42	40	42	46	41	47	34
1249:	41	44	33	44	43	49	53	47
1257:	52	30	46	36	39	45	36	44
1265:	38	30	34	33	39	35	48	36
1273:	40	38	46	43	34	32	41	38
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1297:	33	35	34	33	30	30	32	38
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1329:	35	153	2072	9871	11671	3307	222	30
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1353:	23	19	19	20	20	21	19	20
1361:	10	19	12	16	19	14	21	22
1369:	15	7	13	21	7	17	26	13
1377:	11	19	17	14	24	16	17	20
1385:	30	29	20	11	17	17	16	14

1393:	19	16	19	31	19	22	19	16
1401:	21	14	9	21	15	13	21	14
1409:	22	15	20	13	13	26	19	16
1417:	13	19	24	18	14	17	12	17
1425:	13	10	14	23	13	18	17	7
1433:	9	15	19	16	16	9	4	11
1441:	17	16	18	13	23	20	16	15
1449:	27	18	13	14	15	20	15	14
1457:	12	16	6	12	23	13	14	12
1465:	16	9	25	14	21	19	9	15
1473:	15	10	15	15	19	15	19	12
1481:	14	17	17	19	15	5	12	15
1489:	17	9	14	12	11	14	11	13
1497:	9	8	15	17	12	13	10	11
1505:	15	9	19	11	13	12	12	15
1513:	9	19	17	9	10	14	11	10
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1537:	8	16	11	10	13	22	16	11
1545:	20	7	12	14	13	12	14	11
1553:	13	19	15	12	12	14	18	26
1561:	9	10	13	15	16	14	13	18
1569:	16	8	16	14	10	12	6	11
1577:	9	26	8	11	9	10	12	9
1585:	14	18	13	16	14	13	9	12
1593:	15	9	10	8	10	18	16	11
1601:	7	12	10	20	8	9	8	18
1609:	11	12	4	11	11	9	12	15
1617:	12	10	9	10	11	13	12	7
1625:	7	8	12	12	13	9	10	13
1633:	4	10	10	9	5	11	15	15
1641:	14	9	12	14	15	8	10	11
1649:	9	9	7	8	10	8	13	8
1657:	7	9	3	10	8	8	6	6
1665:	7	11	14	15	10	3	5	10
1673:	7	8	6	12	4	9	6	9
1681:	7	13	8	9	9	13	8	4
1689:	8	11	11	7	14	9	10	13
1697:	9	9	10	8	9	12	11	8
1705:	11	7	9	13	8	12	5	7
1713:	6	9	7	6	9	10	11	6
1721:	8	13	8	15	13	5	6	8
1729:	9	12	8	6	7	7	7	8
1737:	8	5	5	8	11	13	6	9
1745:	9	12	8	8	6	11	6	4
1753:	6	7	9	4	6	6	7	5
1761:	8	10	11	10	9	9	9	6
1769:	8	7	8	5	2	6	5	3
1777:	12	5	3	9	9	9	9	3
1785:	10	5	6	13	5	7	7	12
1793:	12	11	7	7	6	12	8	10
1801:	5	9	3	8	7	6	10	7
1809:	3	8	10	8	9	8	6	9
1817:	10	5	6	8	9	10	5	11
1825:	5	10	6	5	5	7	9	5
1833:	13	24	62	119	81	17	10	7
1841:	9	3	9	8	12	7	11	9
1849:	8	12	8	7	8	12	7	10
1857:	13	10	3	6	12	11	5	6
1865:	7	7	6	8	7	10	8	11

1873:	9	7	10	7	8	10	8	11
1881:	8	10	3	5	10	6	7	4
1889:	7	7	11	6	6	11	8	5
1897:	7	3	8	6	3	3	5	7
1905:	5	7	4	5	7	3	6	5
1913:	9	8	8	2	6	7	10	6
1921:	11	9	10	6	6	7	6	6
1929:	6	7	4	14	8	9	10	5
1937:	9	12	6	9	8	6	7	8
1945:	4	5	11	14	11	7	5	6
1953:	11	12	8	9	9	8	6	3
1961:	7	9	9	4	7	5	3	7
1969:	4	6	5	1	5	10	5	11
1977:	8	6	8	6	8	7	8	11
1985:	3	4	5	5	8	11	8	11
1993:	5	9	1	3	6	9	4	5
2001:	6	7	10	12	6	3	6	6
2009:	6	5	2	6	7	11	9	9
2017:	5	4	6	5	7	4	7	6
2025:	7	5	4	7	6	4	5	7
2033:	8	4	11	3	5	3	5	4
2041:	9	9	4	4	4	4	2	12
2049:	8	6	12	7	4	7	4	9
2057:	6	3	8	5	4	9	4	10
2065:	7	2	7	8	3	4	3	3
2073:	1	6	6	5	8	4	3	6
2081:	5	8	8	8	3	5	3	3
2089:	4	7	7	8	4	5	6	10
2097:	6	9	5	7	8	3	12	8
2105:	5	6	4	2	6	7	5	5
2113:	9	3	6	4	1	11	6	5
2121:	1	2	5	5	3	2	12	11
2129:	6	4	10	9	3	7	4	6
2137:	4	8	11	3	7	4	11	4
2145:	6	3	3	2	3	3	10	2
2153:	8	10	3	11	6	8	5	5
2161:	5	7	3	4	4	2	5	7
2169:	6	11	7	5	6	6	5	4
2177:	4	2	6	9	12	6	8	7
2185:	3	4	7	2	5	7	6	6
2193:	7	9	6	6	3	6	3	6
2201:	4	5	7	5	11	2	4	3
2209:	12	9	7	5	5	4	10	4
2217:	2	5	4	4	8	6	8	6
2225:	6	4	10	5	7	6	7	9
2233:	8	3	8	5	2	6	6	5
2241:	3	6	7	4	5	7	10	3
2249:	4	6	7	5	5	5	2	4
2257:	6	6	5	10	5	4	8	8
2265:	9	7	8	4	4	7	8	8
2273:	5	6	6	9	4	11	8	3
2281:	6	10	9	9	4	5	7	7
2289:	8	3	10	4	7	4	3	2
2297:	5	6	4	3	6	5	6	2
2305:	2	3	9	5	3	5	2	1
2313:	2	5	3	4	3	3	2	7
2321:	4	7	9	4	3	4	5	3
2329:	3	3	7	7	5	1	2	6
2337:	1	5	3	5	4	6	1	3
2345:	4	7	5	4	3	7	3	1

2353:	5	0	6	2	1	2	1	3
2361:	7	3	3	5	3	3	3	3
2369:	4	5	2	5	3	2	1	5
2377:	3	1	3	1	2	0	1	2
2385:	1	0	2	4	2	1	3	3
2393:	2	3	2	1	3	1	0	1
2401:	1	2	0	0	1	2	3	0
2409:	2	2	0	0	2	1	1	0
2417:	1	2	0	1	1	1	1	0
2425:	0	0	3	1	2	0	2	0
2433:	1	0	1	0	2	1	2	0
2441:	2	1	1	1	1	1	3	2
2449:	3	1	2	3	3	0	0	1
2457:	0	3	3	1	1	0	5	0
2465:	1	1	1	1	2	0	2	1
2473:	1	0	0	2	1	0	0	1
2481:	1	0	0	1	1	0	0	1
2489:	1	0	1	0	0	2	1	1
2497:	0	5	1	2	1	2	15	63
2505:	163	147	43	6	0	1	0	0
2513:	0	0	0	3	1	0	2	0
2521:	0	0	1	0	1	1	0	1
2529:	0	0	1	2	0	1	0	0
2537:	0	0	0	0	0	1	0	0
2545:	0	0	0	2	0	1	1	0
2553:	0	0	0	0	0	0	1	0
2561:	0	0	0	0	0	1	0	1
2569:	1	0	0	0	1	0	1	0
2577:	0	2	0	0	0	0	0	0
2585:	0	0	0	1	0	0	1	0
2593:	1	1	0	0	0	0	0	0
2601:	0	0	0	0	0	0	0	0
2609:	0	0	0	0	8	16	8	4
2617:	1	0	1	0	0	0	0	0
2625:	0	1	0	2	1	0	0	0
2633:	0	0	0	0	0	0	0	0
2641:	1	0	0	2	2	0	1	0
2649:	1	0	0	0	0	0	0	0
2657:	0	0	0	0	1	0	3	0
2665:	0	0	2	0	0	0	0	1
2673:	0	0	0	2	0	0	0	0
2681:	1	1	0	0	0	1	0	1
2689:	0	0	0	0	0	0	0	0
2697:	0	0	1	0	0	0	0	0
2705:	0	0	1	0	0	0	0	0
2713:	0	0	0	0	0	0	0	0
2721:	0	0	0	0	1	0	0	0
2729:	0	0	0	0	2	4	0	1
2737:	1	0	0	0	0	0	0	0
2745:	0	0	0	1	0	0	0	0
2753:	0	0	0	0	0	1	0	0
2761:	1	0	1	0	0	0	1	1
2769:	0	0	0	0	0	0	0	0
2777:	0	1	0	0	0	0	0	0
2785:	0	1	0	0	0	0	0	1
2793:	0	0	0	0	0	1	1	0
2801:	0	0	0	0	0	0	0	0
2809:	0	0	0	0	0	0	0	1
2817:	0	0	1	0	0	0	0	0
2825:	1	0	0	0	0	0	0	0

2833:	0	1	0	0	0	0	0	0
2841:	0	1	1	0	0	1	0	0
2849:	0	0	0	1	0	0	0	0
2857:	0	0	0	0	0	0	1	0
2865:	0	1	0	0	0	0	1	0
2873:	0	0	0	0	0	0	0	0
2881:	0	0	0	0	1	0	0	0
2889:	1	0	0	0	0	0	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	0	0	0	1	0
2921:	0	0	0	0	0	1	0	0
2929:	1	0	1	0	0	0	0	0
2937:	0	0	1	0	0	0	0	0
2945:	0	0	0	0	0	0	0	0
2953:	2	0	0	0	0	0	0	0
2961:	1	0	0	0	0	0	0	0
2969:	0	1	0	0	0	0	0	0
2977:	0	0	0	0	1	0	0	1
2985:	1	0	0	1	0	0	0	0
2993:	0	0	0	0	0	1	0	0
3001:	0	0	0	0	0	0	1	0
3009:	0	1	0	0	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	0	0	0	0	0	0
3041:	1	0	0	1	0	0	0	0
3049:	0	0	0	1	1	0	0	0
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	1	1	1	1
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	1	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	0	1	0	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	0	0	1	0	0
3129:	0	0	0	0	0	1	1	0
3137:	1	0	0	0	0	0	1	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	1	0	0	0
3161:	0	1	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	0	0	0	0	0
3185:	0	0	0	0	0	1	0	0
3193:	0	0	0	0	0	0	1	0
3201:	0	0	0	1	0	0	0	0
3209:	1	0	0	0	0	0	1	1
3217:	0	0	0	0	0	0	0	0
3225:	0	1	0	0	0	0	0	0
3233:	0	0	0	0	0	0	1	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	1	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	3	1	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0

3313:	0	1	0	0	0	0	0	0
3321:	0	0	1	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	0	1	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	1	1	0	0	0	2	0	0
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	1	0
3393:	0	0	0	0	0	0	0	0
3401:	0	0	0	0	0	0	0	1
3409:	0	0	0	0	0	0	0	0
3417:	0	0	0	1	0	0	0	0
3425:	0	0	0	1	1	0	0	0
3433:	0	0	0	0	0	0	0	1
3441:	1	0	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	1	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	1	0	0	0	0
3497:	0	1	0	0	0	0	0	1
3505:	0	0	1	0	1	0	0	0
3513:	0	0	1	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	1	0	0	1
3545:	0	0	0	1	0	0	0	1
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	1	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	1
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	1	0	0	0
3673:	0	0	1	0	0	0	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	1
3697:	0	0	0	0	0	0	1	0
3705:	0	0	1	0	0	0	0	0
3713:	0	2	1	0	0	1	0	0
3721:	0	0	0	0	1	0	0	0
3729:	0	0	0	0	0	0	0	1
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	1	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	1	0	0	0
3785:	0	0	0	0	0	0	0	0

3793:	0	0	0	0	1	1	0	1
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	0	0	0	0	0	0	0	1
3825:	0	0	0	1	0	1	0	0
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	1	0	0	0	0
3897:	0	0	0	0	0	0	1	0
3905:	0	0	0	0	1	0	0	1
3913:	0	0	0	0	0	0	0	1
3921:	0	0	0	0	0	0	0	2
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	1	0	0	0	0
3945:	0	0	0	1	0	0	1	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	0
3993:	0	0	0	0	0	1	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	1	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	1	0	0	0	0	2
4057:	0	0	0	0	0	0	0	0
4065:	0	1	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	1	0	0	0
4089:	0	0	0	0	0	0	0	1

10241613

Sample ID : 1303013-02

Acquisition date : 1-APR-2013 14:43:13

VAX/VMS Peak Search Report Generated 1-APR-2013 15:43:31.16

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE] SMP_130301302_GE2_GAS1202_190138.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : BLANK
Deposition Date :
Sample Date : 1-APR-2013 00:00:00. Acquisition date : 1-APR-2013 14:43:13.
Sample ID : 1303013-02 Sample Quantity : 7.83400E+02 gram
Sample type : SOLID Sample Geometry : 0
Detector name : GE2 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.62 0.0%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw %Err	Fit	Nuclides
0	31.29	90	616	1.79	31.40	29	7 96.8		
1	93.02	76	80	1.52	93.14	88	10 43.4	2.85E+00	
0	622.58	19	24	2.63	622.68	618	12112.9		RU-106
3	658.70	8	3	2.50	658.80	658	23 39.3	2.31E+00	
3	666.32	17	16	2.50	666.42	658	23 99.1		
0	838.00	13	9	2.89	838.09	835	8 92.3		
0	846.95	15	19	4.79	847.04	843	9113.1		
0	897.61	8	6	1.19	897.70	893	8125.2		
0	1108.46	11	6	2.80	1108.54	1105	7 95.3		
0	1121.26*	15	13	2.24	1121.35	1117	9109.1		
0	1202.10	6	4	1.47	1202.18	1200	7133.9		
0	1224.66	7	1	2.71	1224.75	1222	6 94.9		
0	1332.85*	14	3	2.96	1332.93	1329	9 75.1		
0	1377.92*	9	0	4.48	1378.00	1374	8 77.4		

AG
4/2/13

Summary of Nuclide Activity
Sample ID : 1303013-02

Page : 2
Acquisition date : 1-APR-2013 14:43:13

Total number of lines in spectrum 14
Number of unidentified lines 6
Number of lines tentatively identified by NID 8 57.14%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RU-106	368.20D	1.00	2.041E-01	2.043E-01	2.325E-01	113.81	
Total Activity :			2.041E-01	2.043E-01			

Grand Total Activity : 2.041E-01 2.043E-01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Line Activity Report
Sample ID : 1303013-02

Page : 3
Acquisition date : 1-APR-2013 14:43:13

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
RU-106	621.84	9.80*	9.105E-01	2.041E-01	2.043E-01	113.81	OK

Final Mean for 1 Valid Peaks = 2.043E-01+/- 2.325E-01 (113.81%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
RU-106	2.043E-01	2.325E-01	2.156E-01	3.000E-02	0.948

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	3.758E-02		1.151E-01	2.251E-01	2.250E-02	0.167
NA-22	2.087E-03		1.050E-02	2.316E-02	2.104E-03	0.090
NA-24	1.317E-02		2.762E-02	5.803E-02	4.849E-03	0.227
AL-26	-1.632E-03		9.807E-03	2.163E-02	1.984E-03	-0.075
K-40	-1.186E-02		1.907E-01	4.178E-01	3.689E-02	-0.028
TI-44	-1.078E-02		1.112E-02	1.793E-02	1.440E-03	-0.601
SC-46	4.957E-03		1.341E-02	2.573E-02	2.182E-03	0.193
V-48	-1.830E-03		1.464E-02	2.750E-02	2.489E-03	-0.067
CR-51	1.284E-02		1.198E-01	2.066E-01	3.443E-02	0.062
MN-54	2.615E-03		1.414E-02	2.557E-02	2.241E-03	0.102
CO-56	2.083E-02	+	2.364E-02	3.758E-02	3.274E-03	0.554
CO-57	7.154E-04		1.198E-02	2.069E-02	2.530E-03	0.035
CO-58	1.653E-04		1.337E-02	2.572E-02	2.286E-03	0.006
FE-59	-9.436E-03		2.647E-02	4.453E-02	4.662E-03	-0.212
CO-60	-2.942E-03		1.390E-02	2.968E-02	3.070E-03	-0.099
ZN-65	-4.266E-03		4.779E-02	6.118E-02	6.100E-03	-0.070
GA-67	9.222E-02	+	1.115E-01	7.248E-02	8.175E-02	1.272
SE-75	-6.754E-03		1.854E-02	3.028E-02	5.294E-03	-0.223
RB-82	-1.154E-01		1.133E-01	1.773E-01	1.592E-02	-0.651
RB-83	-4.862E-03		2.563E-02	4.750E-02	7.795E-03	-0.102
KR-85	-2.435E+00		4.041E+00	6.989E+00	6.969E-01	-0.348
SR-85	-1.072E-02		1.779E-02	3.076E-02	3.067E-03	-0.348
Y-88	8.248E-03		1.395E-02	3.382E-02	3.112E-03	0.244
NB-93M	-2.174E+01		8.828E+00	2.147E+00	8.476E-01	-10.129
NB-94	-3.104E-03		1.293E-02	2.390E-02	2.052E-03	-0.130
NB-95	1.930E-02		1.538E-02	3.343E-02	3.011E-03	0.577
NB-95M	1.116E-02		5.651E-02	9.707E-02	1.399E-02	0.115
ZR-95	1.404E-02		1.998E-02	4.389E-02	4.329E-03	0.320
MO-99	1.538E-02		1.288E-01	2.482E-01	2.249E-02	0.062
RU-103	-5.405E-03		1.452E-02	2.609E-02	3.922E-03	-0.207
AG-108M	-2.783E-03		1.437E-02	2.662E-02	2.418E-03	-0.105
CD-109	-2.031E-01		3.126E-01	4.697E-01	5.366E-02	-0.432
AG-110M	9.535E-03	+	3.869E-03	3.023E-02	2.763E-03	0.315
SN-113	3.288E-03		1.814E-02	3.463E-02	3.457E-03	0.095
TE123M	6.396E-03		1.220E-02	2.178E-02	1.965E-03	0.294
SB-124	-2.295E-02		1.719E-02	2.661E-02	2.555E-03	-0.863
I-125	1.256E+00		4.153E-01	7.375E-01	8.234E-02	1.703
SB-125	3.186E-03		3.594E-02	6.910E-02	6.940E-03	0.046
SB-126	-8.234E-03		2.590E-02	4.685E-02	4.258E-03	-0.176
SN-126	-2.984E-02		3.084E-02	4.478E-02	4.357E-03	-0.666
SB-127	1.853E-02		5.059E-02	9.065E-02	8.256E-03	0.204
I-129	-1.325E-02		8.791E-02	1.391E-01	1.925E-02	-0.095

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
I-131	1.748E-03		1.312E-02	2.526E-02	3.179E-03	0.069
TE-132	2.835E-03		1.278E-02	2.248E-02	3.074E-03	0.126
BA-133	8.597E-03		2.222E-02	3.905E-02	6.527E-03	0.220
I-133	7.439E-03		2.292E-02	4.518E-02	4.490E-03	0.165
CS-134	-1.978E-02		1.796E-02	2.892E-02	2.778E-03	-0.684
CS-135	-2.580E-02		6.886E-02	1.123E-01	2.004E-02	-0.230
I-135	-1.269E-01		3.071E-01	5.309E-01	4.925E-02	-0.239
CS-136	2.262E-03		1.972E-02	3.853E-02	3.743E-03	0.059
CS-137	-2.602E-03		1.976E-02	3.748E-02	3.417E-03	-0.069
LA-138	-1.566E-03		1.840E-02	3.664E-02	3.125E-03	-0.043
CE-139	-5.405E-03		1.242E-02	2.045E-02	1.716E-03	-0.264
BA-140	-1.631E-02		4.498E-02	8.135E-02	2.725E-02	-0.200
LA-140	1.365E-02		1.357E-02	3.510E-02	3.112E-03	0.389
CE-141	-3.903E-02		2.355E-02	3.447E-02	6.701E-03	-1.132
CE-143	3.031E-02		4.049E-02	7.316E-02	1.336E-02	0.414
CE-144	-5.433E-02		8.868E-02	1.445E-01	1.626E-02	-0.376
PM-144	5.765E-04		1.460E-02	2.761E-02	2.514E-03	0.021
PM-145	2.196E-01		1.765E-01	1.871E-01	1.224E-01	1.173
PM-146	1.066E-02		2.999E-02	5.856E-02	5.835E-03	0.182
ND-147	5.233E-02		9.442E-02	1.909E-01	1.896E-02	0.274
PM-149	5.231E-03		4.427E-01	7.556E-01	1.414E-01	0.007
EU-152	-4.421E-02		1.206E-01	2.100E-01	2.265E-02	-0.211
GD-153	8.635E-03		4.058E-02	7.176E-02	7.707E-03	0.120
EU-154	5.402E-03		2.939E-02	6.464E-02	5.874E-03	0.084
EU-155	-2.899E-02		3.600E-02	5.323E-02	5.124E-03	-0.545
EU-156	8.348E-03		1.322E-01	2.561E-01	5.873E-02	0.033
HO-166M	-6.789E-03		2.401E-02	4.381E-02	3.985E-03	-0.155
HF-172	2.060E-02		9.027E-02	1.578E-01	1.878E-02	0.131
LU-172	-1.389E-02		2.603E-02	4.430E-02	4.348E-03	-0.314
LU-173	-1.766E-02		5.347E-02	8.755E-02	1.601E-02	-0.202
HF-175	-1.014E-03		1.297E-02	2.203E-02	3.201E-03	-0.046
LU-176	1.117E-03		1.243E-02	2.136E-02	3.711E-03	0.052
TA-182	7.406E-02	+	8.119E-02	1.354E-01	1.354E-02	0.547
IR-192	-5.776E-03		2.449E-02	4.504E-02	4.497E-03	-0.128
HG-203	-4.867E-03		1.549E-02	2.534E-02	4.869E-03	-0.192
BI-207	-4.410E-03		1.358E-02	2.502E-02	2.450E-03	-0.176
TL-208	-4.312E-02		4.900E-02	8.940E-02	8.691E-03	-0.482
BI-210M	-3.768E-03		2.451E-02	4.109E-02	7.052E-03	-0.092
PB-210	-1.338E-01		3.253E-01	5.953E-01	5.175E-02	-0.225
PB-211	8.357E-02		3.703E-01	7.184E-01	7.046E-02	0.116
BI-212	4.645E-02		1.094E-01	2.223E-01	2.019E-02	0.209
PB-212	-2.772E-02		3.053E-02	5.045E-02	7.421E-03	-0.549
BI-214	2.360E-02		3.986E-02	7.999E-02	7.642E-03	0.295
PB-214	-4.770E-02		3.769E-02	6.091E-02	8.387E-03	-0.783
RN-219	4.559E-04		1.736E-01	3.275E-01	3.207E-02	0.001
RA-223	5.502E-02		2.995E-01	5.212E-01	8.406E-02	0.106
RA-224	2.090E-02		3.182E-01	5.404E-01	8.078E-02	0.039
RA-225	-1.498E-01		5.710E-02	7.836E-02	7.742E-03	-1.912

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
RA-226	3.688E-01		8.001E-01	8.612E-01	1.578E+00	0.428
TH-227	5.009E-02		1.087E-01	1.905E-01	2.752E-02	0.263
AC-228	-2.321E-02		5.634E-02	1.002E-01	8.540E-03	-0.232
TH-230	-2.909E+00		2.827E+00	4.536E+00	3.636E-01	-0.641
PA-231	-7.900E-02		4.743E-01	7.943E-01	1.402E-01	-0.099
TH-231	7.916E-02		4.090E-01	6.580E-01	1.131E-01	0.120
PA-233	2.377E-02		3.177E-02	5.736E-02	1.538E-02	0.414
PA-234	1.235E-02		4.559E-02	8.050E-02	9.218E-03	0.153
PA-234M	9.888E-01		1.513E+00	3.370E+00	3.092E-01	0.293
TH-234	-6.644E-02		3.284E-01	6.126E-01	4.723E-02	-0.108
U-235	-1.509E-01		1.071E-01	1.643E-01	3.030E-02	-0.918
NP-237	-7.110E-02		8.825E-02	1.305E-01	1.256E-02	-0.545
NP-239	-5.399E-02		5.085E-02	7.969E-02	8.727E-03	-0.677
AM-241	-7.345E-02		3.603E-02	5.470E-02	4.088E-03	-1.343
AM-243	-9.660E-03		1.799E-02	3.129E-02	2.679E-03	-0.309
CM-243	4.511E-02		8.338E-02	1.486E-01	2.810E-02	0.304

Summary of Nuclide Activity
Sample ID : 1303013-02

Page : 7
Acquisition date : 1-APR-2013 14:43:13

Total number of lines in spectrum 14
Number of unidentified lines 6
Number of lines tentatively identified by NID 8 57.14%

Nuclide Type : FISSION

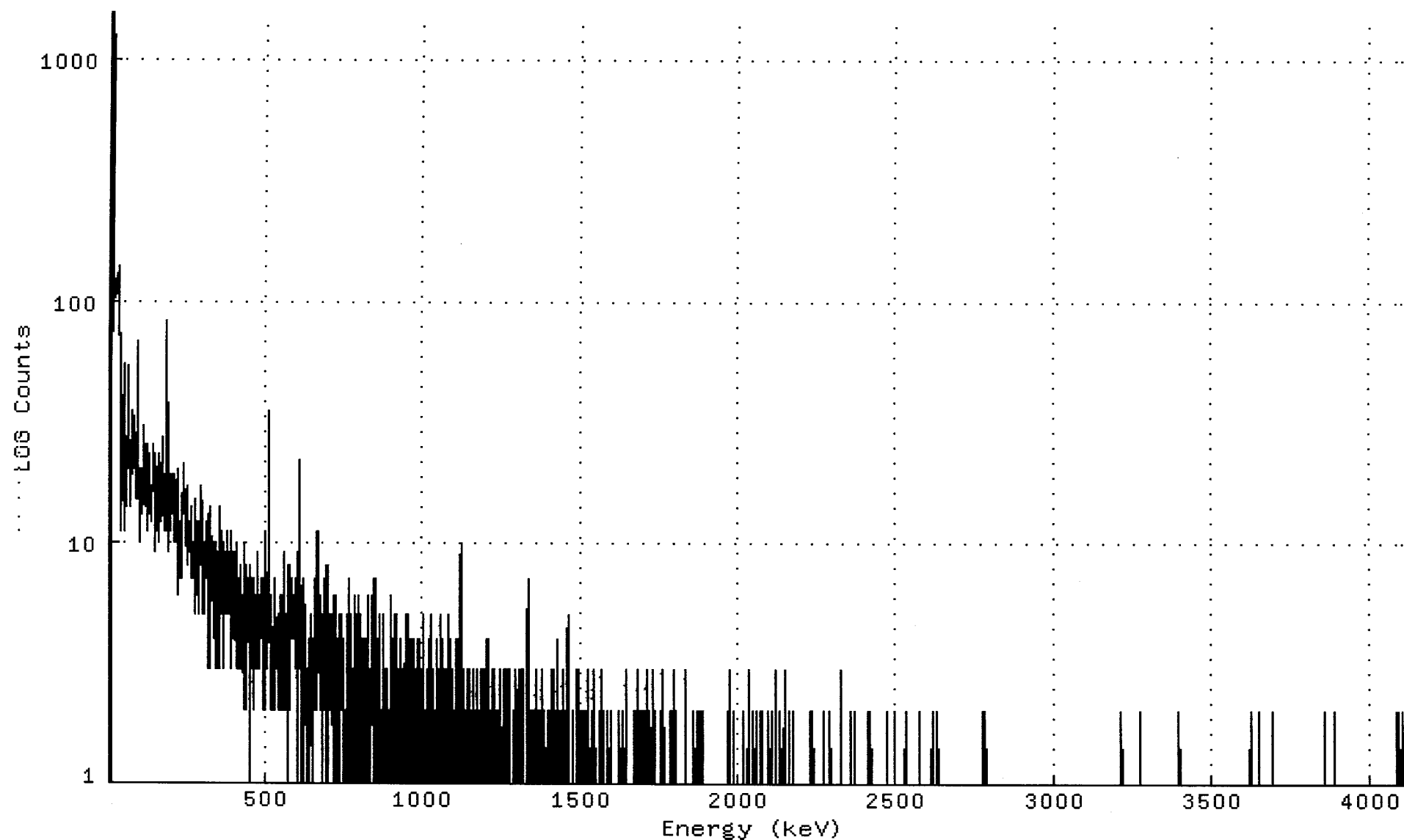
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RU-106	368.20D	1.00	2.041E-01	2.043E-01	2.325E-01	113.81	
Total Activity :			2.041E-01	2.043E-01			

Grand Total Activity : 2.041E-01 2.043E-01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301302_GE2_GAS1202_190138.CNF;1
Title :
Sample Title: BLANK
Start Time: 1-APR-2013 14:43: Sample Time: 1-APR-2013 00:00: Energy Offset: -1.16012E-01
Real Time : 0 01:00:00.62 Sample ID : 1303013-02 Energy Slope : 1.00003E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301302_GE2_GAS1202_1901

Channel

1:	0	0	0	0	0	69	682	1439
9:	1381	1580	676	1261	1043	106	74	97
17:	106	116	121	112	108	109	116	122
25:	106	129	119	127	122	108	137	115
33:	81	71	72	61	59	35	22	11
41:	19	21	16	26	20	30	54	11
49:	14	18	18	20	24	17	16	27
57:	17	14	29	26	20	28	53	38
65:	18	14	19	14	23	21	24	19
73:	35	28	33	23	29	26	21	20
81:	20	33	19	28	24	15	18	18
89:	21	35	24	41	68	25	15	20
97:	12	18	16	20	10	18	20	16
105:	17	15	13	15	30	18	16	19
113:	23	25	17	18	19	21	14	21
121:	20	25	11	25	21	23	17	13
129:	19	20	16	16	13	17	13	12
137:	12	21	18	25	24	17	21	19
145:	16	9	16	18	23	18	19	14
153:	19	16	11	13	17	10	18	21
161:	23	14	21	13	14	15	12	13
169:	14	14	17	16	27	11	18	12
177:	12	13	15	24	20	11	13	21
185:	48	82	17	12	19	9	9	11
193:	13	13	11	15	13	19	13	15
201:	14	18	19	13	15	16	11	10
209:	10	19	11	18	11	10	10	15
217:	12	6	11	20	11	11	8	8
225:	10	8	7	12	8	15	10	12
233:	7	12	21	13	13	21	15	21
241:	13	14	11	14	10	10	9	13
249:	12	8	17	10	10	9	12	12
257:	9	11	11	14	11	7	7	10
265:	10	9	9	10	7	8	11	9
273:	12	5	10	15	10	12	11	7
281:	9	6	9	10	11	12	7	5
289:	12	9	8	9	11	13	17	13
297:	5	9	6	5	5	5	10	8
305:	10	10	7	10	7	7	12	12
313:	7	13	7	3	9	6	10	4
321:	10	11	3	5	14	8	10	6
329:	6	8	8	4	9	10	5	4
337:	10	6	10	6	7	3	6	5
345:	8	9	3	6	7	3	13	14
353:	6	9	11	9	11	8	6	7
361:	5	10	6	5	3	8	7	6
369:	5	5	5	6	9	5	11	8
377:	7	6	5	8	7	9	6	9
385:	5	5	11	3	6	7	10	8
393:	7	4	6	9	6	4	5	5
401:	9	6	6	5	3	5	10	6
409:	5	4	3	5	5	7	3	7
417:	6	8	6	6	8	3	6	4
425:	6	3	6	4	2	9	10	4

433:	7	4	7	2	3	6	8	5
441:	5	5	5	5	5	7	2	8
449:	1	5	5	3	6	7	7	7
457:	7	3	7	6	3	2	6	2
465:	7	4	6	5	4	5	3	8
473:	6	3	9	5	6	4	6	4
481:	3	4	3	6	5	6	4	7
489:	5	6	2	6	7	3	4	8
497:	5	3	5	2	11	5	3	5
505:	3	5	6	7	16	26	35	21
513:	7	2	6	5	2	6	4	4
521:	2	4	4	4	4	5	2	2
529:	7	4	6	4	3	3	3	3
537:	3	4	2	2	5	5	2	5
545:	2	2	6	3	2	5	2	5
553:	6	6	2	5	4	5	9	2
561:	6	3	3	4	3	5	2	3
569:	8	6	3	2	1	6	3	2
577:	8	2	5	4	5	7	4	5
585:	4	5	4	6	4	6	4	5
593:	7	3	4	4	4	7	4	7
601:	3	0	3	9	5	3	8	4
609:	22	11	4	4	1	6	1	6
617:	1	3	4	2	7	6	5	3
625:	3	2	4	3	1	3	3	1
633:	1	2	4	2	4	4	4	3
641:	1	2	2	2	4	5	2	0
649:	2	4	2	3	2	2	4	4
657:	4	2	7	4	7	11	3	2
665:	7	11	5	6	5	4	4	2
673:	3	3	6	3	2	5	3	0
681:	2	4	5	2	4	3	5	7
689:	7	1	3	3	8	6	2	8
697:	3	1	2	0	5	2	2	5
705:	4	3	3	5	2	3	3	2
713:	3	1	6	4	2	1	5	1
721:	1	1	6	1	4	2	4	2
729:	3	3	2	1	2	3	4	1
737:	2	5	2	2	2	5	5	2
745:	3	4	4	1	2	0	1	1
753:	1	0	2	2	2	2	5	0
761:	2	2	0	4	5	6	3	7
769:	3	0	5	2	5	2	2	1
777:	1	2	3	3	3	2	6	4
785:	1	2	4	5	5	2	1	1
793:	2	6	4	1	2	4	2	4
801:	0	3	5	3	1	4	0	1
809:	2	2	3	2	3	1	4	4
817:	0	4	1	2	4	0	1	2
825:	2	0	1	2	6	0	1	0
833:	3	0	1	4	2	6	2	3
841:	3	1	2	3	5	7	5	2
849:	7	2	1	4	4	3	0	3
857:	4	2	1	3	0	3	5	2
865:	1	1	2	1	1	1	2	2
873:	0	5	5	2	1	3	3	2
881:	2	0	0	2	2	1	3	3
889:	1	1	2	1	1	1	1	1
897:	6	2	2	0	1	3	0	4
905:	2	2	3	2	2	5	3	2

913:	0	0	5	0	2	0	2	3
921:	3	2	1	0	2	0	4	2
929:	0	1	1	0	1	3	3	0
937:	3	2	1	2	0	2	2	2
945:	5	2	0	2	2	1	5	2
953:	0	3	0	1	0	2	1	0
961:	4	2	1	3	4	2	1	4
969:	4	1	3	4	0	0	1	2
977:	0	0	3	2	2	1	1	1
985:	4	1	1	4	0	2	2	1
993:	0	1	0	1	3	0	5	3
1001:	2	0	1	4	1	0	0	1
1009:	0	2	0	2	1	2	2	1
1017:	3	0	4	3	2	3	1	1
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1033:	1	2	3	0	1	0	2	2
1041:	1	1	4	2	2	1	2	3
1049:	3	0	2	2	0	1	5	0
1057:	1	1	0	1	1	4	2	1
1065:	2	2	0	3	3	3	0	0
1073:	1	1	3	1	1	2	0	2
1081:	0	1	5	1	0	1	0	4
1089:	1	2	3	0	2	1	2	0
1097:	0	2	1	2	0	2	2	1
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1113:	0	1	2	4	2	1	5	8
1121:	10	4	1	1	0	1	2	1
1129:	1	1	0	3	1	1	2	1
1137:	0	1	2	2	3	1	3	0
1145:	1	0	1	3	1	1	2	0
1153:	1	2	2	1	2	3	1	3
1161:	0	1	2	1	2	1	1	0
1169:	1	1	0	2	2	3	0	2
1177:	1	2	0	0	1	2	1	0
1185:	3	0	3	0	3	1	1	2
1193:	1	0	0	3	0	1	0	0
1201:	1	4	2	1	1	1	1	1
1209:	2	4	1	2	2	1	1	0
1217:	2	1	3	1	0	1	1	2
1225:	1	3	0	0	0	2	0	0
1233:	2	1	1	0	1	2	0	2
1241:	1	0	1	3	1	1	3	1
1249:	0	1	1	1	0	1	1	2
1257:	2	2	3	0	0	1	2	2
1265:	3	2	3	1	1	0	0	0
1273:	0	3	0	0	1	1	0	1
1281:	0	0	1	0	0	0	1	2
1289:	1	0	2	0	2	1	0	3
1297:	2	2	0	1	1	1	2	0
1305:	1	1	0	3	0	0	0	1
1313:	2	3	1	2	0	1	3	0
1321:	1	0	1	0	1	0	0	0
1329:	0	0	5	4	7	2	1	3
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1345:	2	0	2	0	0	0	0	2
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1361:	0	0	1	1	1	0	0	2
1369:	2	2	0	1	0	0	0	2
1377:	3	1	3	2	0	0	2	1
1385:	0	1	2	1	0	0	0	1

1393:	1	0	0	0	2	0	1	2
1401:	2	2	1	1	0	0	3	1
1409:	2	1	1	3	2	1	1	1
1417:	0	0	2	1	0	1	1	4
1425:	0	1	1	0	0	1	0	0
1433:	0	2	2	0	0	0	0	1
1441:	2	0	3	0	0	0	1	1
1449:	1	2	1	1	2	0	3	1
1457:	0	1	3	4	5	4	0	0
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1513:	1	1	2	0	0	0	0	0
1521:	1	0	2	3	0	1	0	1
1529:	0	1	0	0	2	0	0	0
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1593:	0	2	1	2	0	1	1	0
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1609:	1	1	0	0	1	0	1	1
1617:	1	0	1	1	0	0	2	1
1625:	1	0	0	0	0	2	1	1
1633:	0	0	1	1	0	1	0	1
1641:	0	0	2	0	0	3	0	0
1649:	0	0	0	0	0	1	0	1
1657:	0	1	0	0	1	1	0	1
1665:	0	1	0	1	1	0	0	2
1673:	0	0	1	2	1	0	0	3
1681:	0	1	1	1	0	2	0	0
1689:	0	2	0	2	0	0	0	1
1697:	2	0	1	1	0	0	0	2
1705:	1	0	0	1	3	0	0	0
1713:	2	2	0	0	0	2	0	1
1721:	0	1	0	1	1	1	3	0
1729:	1	0	2	1	0	2	1	1
1737:	1	0	0	0	0	1	1	0
1745:	0	0	1	0	1	0	1	1
1753:	1	2	1	0	0	1	0	1
1761:	0	0	3	0	0	0	0	1
1769:	0	1	0	0	1	0	0	0
1777:	1	0	0	1	1	1	0	1
1785:	2	1	0	0	0	0	0	0
1793:	2	0	1	0	3	0	0	0
1801:	0	0	1	2	0	1	0	1
1809:	0	0	0	0	0	0	0	0
1817:	0	0	1	0	0	1	0	0
1825:	0	1	0	1	0	0	1	0
1833:	0	1	3	1	0	1	0	1
1841:	1	0	0	0	0	1	0	0
1849:	0	0	0	1	0	0	0	0
1857:	0	1	0	2	1	0	1	0
1865:	0	0	0	0	0	0	0	2

1873:	0	0	0	2	2	0	0	0
1881:	2	0	2	0	2	0	2	0
1889:	0	0	1	0	0	0	1	1
1897:	0	0	1	1	0	0	0	0
1905:	0	0	0	0	0	0	1	0
1913:	0	0	1	0	0	1	0	0
1921:	0	0	1	1	1	0	0	1
1929:	1	0	1	0	1	0	1	0
1937:	0	0	0	1	1	1	0	0
1945:	0	1	1	0	0	0	1	1
1953:	1	1	1	0	0	0	0	1
1961:	0	0	0	0	0	1	1	0
1969:	2	1	0	0	3	0	0	1
1977:	1	1	1	1	0	0	0	0
1985:	1	2	1	1	0	0	0	0
1993:	0	0	1	0	0	0	0	1
2001:	0	0	0	0	0	0	1	1
2009:	1	0	0	0	0	0	2	0
2017:	0	1	0	1	0	0	1	1
2025:	0	0	0	0	1	0	2	0
2033:	3	0	0	1	1	0	0	0
2041:	0	0	0	0	1	2	0	0
2049:	0	1	0	0	0	0	2	0
2057:	0	0	1	1	0	0	1	0
2065:	1	0	0	0	0	0	0	2
2073:	2	0	0	0	0	1	0	0
2081:	1	1	1	1	0	0	1	0
2089:	1	0	0	1	2	0	1	0
2097:	0	0	1	1	0	0	0	2
2105:	0	0	0	1	0	0	0	0
2113:	0	1	1	0	3	0	0	1
2121:	0	0	1	0	0	0	0	0
2129:	0	0	0	1	2	0	0	1
2137:	0	1	0	0	0	0	1	0
2145:	0	3	0	0	1	0	0	1
2153:	0	0	1	0	0	0	0	2
2161:	0	0	0	1	1	0	0	0
2169:	0	1	2	0	0	0	0	0
2177:	0	0	0	1	1	0	0	0
2185:	1	0	0	0	1	0	0	1
2193:	0	0	0	0	0	0	0	0
2201:	0	0	1	0	1	0	0	0
2209:	0	0	0	1	0	0	0	0
2217:	0	1	0	1	0	1	0	1
2225:	0	1	0	1	0	2	0	1
2233:	0	0	0	2	0	1	0	0
2241:	1	0	0	1	0	0	0	1
2249:	0	0	0	0	0	0	1	0
2257:	1	1	0	1	1	1	0	0
2265:	1	0	1	1	0	2	0	0
2273:	0	0	0	0	1	0	0	0
2281:	0	1	0	0	0	0	0	0
2289:	0	2	2	0	1	0	1	0
2297:	0	0	0	1	0	0	0	0
2305:	0	0	0	0	0	1	0	0
2313:	0	1	0	0	1	0	1	0
2321:	0	0	3	1	0	1	0	0
2329:	0	1	0	0	0	0	0	1
2337:	0	0	0	0	0	1	0	1
2345:	0	0	1	0	1	1	1	1

2353:	1	2	1	0	0	0	1	0
2361:	0	1	0	1	1	0	0	2
2369:	0	1	0	0	0	1	1	0
2377:	0	1	0	0	0	0	0	0
2385:	0	1	0	0	0	1	0	0
2393:	0	1	0	0	1	0	0	0
2401:	0	0	0	1	0	0	0	0
2409:	2	1	0	1	1	0	0	0
2417:	0	2	1	0	1	1	1	1
2425:	0	0	1	0	0	0	1	1
2433:	0	0	0	0	1	0	0	0
2441:	0	1	0	0	0	0	0	0
2449:	0	0	1	1	0	0	0	1
2457:	0	0	1	0	0	1	1	0
2465:	0	0	0	0	0	2	1	1
2473:	0	0	0	0	0	1	0	0
2481:	0	0	0	0	1	0	0	0
2489:	0	0	1	0	1	1	0	2
2497:	0	0	0	0	0	1	0	0
2505:	0	0	0	0	0	0	0	0
2513:	1	0	0	0	0	0	0	0
2521:	0	0	0	0	0	1	0	2
2529:	1	0	0	0	0	1	0	0
2537:	0	1	0	0	1	0	0	0
2545:	0	1	0	0	1	1	0	0
2553:	1	0	0	0	0	1	0	0
2561:	0	0	0	1	0	0	0	0
2569:	0	0	0	2	1	0	1	1
2577:	0	1	0	0	0	0	0	0
2585:	0	0	0	0	0	1	1	1
2593:	0	0	0	0	0	0	1	0
2601:	0	0	0	0	0	0	0	0
2609:	0	0	1	1	2	1	0	0
2617:	0	0	0	0	0	0	1	0
2625:	0	0	0	0	0	2	0	0
2633:	0	0	1	0	0	0	0	0
2641:	0	0	0	0	0	0	1	0
2649:	0	0	0	1	1	0	0	0
2657:	1	0	0	0	0	0	0	0
2665:	0	1	0	0	1	0	0	0
2673:	1	0	0	0	0	0	0	0
2681:	0	0	0	0	0	0	0	1
2689:	0	0	0	0	1	0	1	0
2697:	0	0	0	0	0	0	1	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	1	0	0	0	0	0
2721:	0	0	0	0	0	0	0	0
2729:	0	0	0	0	0	0	0	0
2737:	0	0	1	0	0	1	0	0
2745:	0	0	1	0	0	0	0	0
2753:	0	0	1	0	0	0	0	0
2761:	0	0	0	0	0	0	1	0
2769:	0	0	1	2	0	0	0	0
2777:	0	0	0	0	0	2	0	0
2785:	0	0	0	0	0	0	0	0
2793:	1	0	0	0	0	0	0	0
2801:	0	0	0	0	0	0	1	0
2809:	0	0	0	1	0	0	0	0
2817:	0	0	0	0	0	0	0	0
2825:	0	0	0	1	0	0	0	0

2833:	0	0	0	0	0	1	0	0
2841:	0	1	1	0	0	0	0	0
2849:	0	0	1	0	0	0	0	1
2857:	1	0	0	0	0	0	0	0
2865:	0	0	0	0	1	1	0	0
2873:	0	0	0	0	0	1	0	0
2881:	0	0	0	0	1	0	1	0
2889:	0	1	0	1	0	0	0	0
2897:	0	0	0	1	0	0	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	1	0	0	0	0	0
2921:	1	0	0	0	0	0	0	0
2929:	0	0	0	0	0	0	1	0
2937:	0	0	0	0	0	0	1	0
2945:	1	0	0	0	1	1	0	1
2953:	1	0	0	1	0	0	0	0
2961:	0	0	0	0	0	0	0	0
2969:	0	0	0	1	0	0	0	0
2977:	0	0	1	0	0	0	0	1
2985:	0	0	0	0	0	0	0	0
2993:	0	0	0	1	0	1	0	0
3001:	0	0	0	0	0	1	0	0
3009:	0	1	0	1	0	0	0	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	0	0	1	0	1	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	1	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	1	0	0	0	0	0
3081:	0	0	0	0	0	0	0	0
3089:	1	0	0	0	0	1	0	0
3097:	0	0	0	0	0	0	0	0
3105:	1	0	0	1	0	0	0	0
3113:	0	0	0	1	0	0	0	0
3121:	0	0	0	0	0	1	1	0
3129:	0	0	0	0	0	1	0	0
3137:	0	0	1	0	0	0	0	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	1	0	0	0
3177:	0	0	1	0	0	1	0	0
3185:	0	0	0	1	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	1	1	0
3209:	0	0	0	0	2	0	0	0
3217:	0	0	0	0	1	0	0	0
3225:	1	1	0	0	0	0	0	0
3233:	1	0	0	0	0	0	0	0
3241:	0	0	0	0	1	0	0	0
3249:	0	0	1	1	1	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	1	2	0	0
3273:	0	0	0	0	0	0	1	0
3281:	0	0	1	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	1	0	0
3305:	0	0	0	0	0	0	0	0

3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	1	0	1	0	0	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	1	1	1	0	0	1	0	0
3377:	0	0	0	0	0	1	0	0
3385:	0	1	0	0	1	0	0	0
3393:	0	2	2	1	0	0	1	0
3401:	0	0	0	0	0	0	0	0
3409:	1	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	1	0	0	0
3441:	1	0	1	1	0	1	0	0
3449:	0	0	0	0	0	1	0	1
3457:	0	0	0	1	0	0	0	0
3465:	1	1	0	0	0	0	0	0
3473:	0	0	0	0	0	0	0	0
3481:	1	0	0	0	0	0	0	1
3489:	0	1	0	0	0	1	0	0
3497:	0	0	1	0	0	1	0	1
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	1	1	0	0	1	0	0	0
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	1	0	0	0
3545:	0	1	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	1	0	0	0	0	1
3569:	0	0	0	0	0	1	0	1
3577:	0	0	1	1	0	0	0	0
3585:	1	0	0	1	0	0	0	0
3593:	0	0	0	0	0	0	1	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	2	1	0	1	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	2	1
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	1	0	0	0	0
3673:	0	0	0	0	0	1	1	0
3681:	0	0	0	0	0	0	0	0
3689:	2	0	0	0	0	1	0	0
3697:	0	0	0	0	0	0	1	1
3705:	0	0	0	0	0	0	0	0
3713:	0	1	1	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	1	0	0	1
3753:	0	0	0	1	0	0	0	0
3761:	0	0	0	0	0	1	0	0
3769:	0	0	0	1	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	1	1	0

3793:	0	0	0	1	0	1	0	0
3801:	0	0	0	1	0	0	0	0
3809:	0	0	1	1	0	0	0	0
3817:	0	0	0	1	0	1	0	0
3825:	0	0	0	0	0	0	0	0
3833:	0	0	0	1	0	0	0	1
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	2	1	0	0	0
3857:	0	0	0	0	0	0	0	1
3865:	0	0	0	0	0	0	0	0
3873:	0	1	0	1	0	0	0	0
3881:	1	2	0	0	1	0	0	0
3889:	0	0	0	0	0	0	1	0
3897:	0	0	0	0	1	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	1	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	1	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	1	0	0	0	0	0	0
3961:	0	0	1	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	1	0
3985:	0	1	1	0	0	0	0	1
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	1	0	0	0	0
4009:	0	0	1	0	0	0	0	0
4017:	0	0	0	0	0	0	0	1
4025:	0	0	0	0	0	0	0	1
4033:	0	1	0	0	0	0	0	0
4041:	0	1	0	0	0	1	0	0
4049:	0	0	0	0	0	1	0	0
4057:	0	0	0	0	0	0	1	1
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	2	0	1	0	0
4081:	0	0	1	0	2	0	0	0
4089:	0	1	0	0	2	0	0	0

Sample ID : 1303013-03

Page : 1
Acquisition date : 1-APR-2013 10:36:13

VAX/VMS Peak Search Report Generated 1-APR-2013 11:36:49.80

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301303_GE2_GAS1202_190113.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-35-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 10:36:13.
 Sample ID : 1303013-03 Sample Quantity : 5.04860E+02 GRAM
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE2 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:19.53 0.5%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	26.78	250	6495	2.06	26.89	25	5	97.7		
0	45.99*	2192	10803	1.64	46.11	44	5	14.1		PB-210
0	52.71*	1384	12727	1.19	52.82	50	6	26.3		
0	62.84*	3202	18823	1.38	62.95	61	6	14.0		TH-234
1	67.75	635	6531	1.47	67.87	67	14	32.2	1.69E+03	
1	75.02*	13427	13170	1.48	75.13	67	14	3.0		AM-243
0	88.09*	2102	17119	1.14	88.21	85	5	19.2		SN-126
										CD-109
0	93.15	4394	13776	1.63	93.26	91	6	9.1		
0	112.92	589	10488	2.08	113.03	111	6	55.7		
0	122.69	279	10089	2.51	122.81	121	6	114.5		CO-57
0	143.74*	941	10822	1.23	143.86	141	6	35.5		U-235
0	153.88	853	12651	1.35	153.99	151	7	44.3		
0	162.83*	302	8232	2.57	162.94	161	5	91.1		U-235
0	185.80*	9444	12020	1.32	185.91	182	8	4.5		RA-226
0	195.91	474	7923	2.57	196.02	194	6	60.1		
0	204.95*	248	5918	1.31	205.06	204	5	94.2		U-235
1	236.05	1224	4775	1.71	236.16	232	15	17.7	2.14E+01	
1	241.73	10930	3516	1.41	241.84	232	15	2.5		RA-224
0	257.56	1041	7168	3.93	257.67	254	9	30.0		
7	269.87	1879	6624	3.10	269.98	265	13	16.2	7.60E+00	
7	274.21	586	3625	1.79	274.32	265	13	32.4		
0	294.91*	22979	5627	1.33	295.02	291	8	1.7		PB-214
0	323.43	209	2746	1.38	323.54	322	5	76.5		RA-223
0	328.86	237	3273	2.23	328.96	327	6	77.3		
0	337.38	232	3357	1.65	337.49	336	6	80.1		
0	351.54*	39599	4955	1.76	351.64	347	10	1.2		PB-214
0	387.52	578	3411	3.37	387.63	384	8	36.0		
2	401.25	388	2650	2.06	401.36	398	11	43.1	1.51E+00	RN-219
2	404.98	300	2204	1.83	405.08	398	11	49.2		PB-211
0	453.42	285	2746	3.55	453.52	449	9	67.3		
0	461.75	192	1757	2.00	461.85	459	6	70.8		
0	479.80	316	1868	1.62	479.90	477	7	46.7		
0	486.67	379	2032	1.80	486.77	484	8	42.5		
0	510.22*	468	1791	3.42	510.32	507	8	32.9		
2	579.66	297	1146	2.00	579.76	569	17	38.1	2.09E+00	

AG
4/2/13

0077

Sample ID : 1303013-03

Acquisition date : 1-APR-2013 10:36:13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	608.77*	29338	1814	1.60	608.87	604	10	1.3		BI-214
0	631.56	103	962	3.84	631.66	629	7	101.3		
0	639.49	164	1061	3.60	639.59	636	8	70.9		
0	665.07	786	1334	1.82	665.17	661	9	18.3		
0	702.13	287	1151	2.22	702.23	699	8	42.6		
0	719.64	228	1080	1.82	719.74	716	8	51.5		
0	741.75	281	1116	2.81	741.85	738	9	44.7		
0	750.88	193	1252	5.69	750.97	747	10	69.9		
0	767.69*	2747	1423	1.89	767.78	762	11	6.6		
0	785.27	729	1007	2.10	785.37	782	8	16.8		
0	805.60	721	1057	2.12	805.70	802	9	17.9		
2	831.08	119	683	1.65	831.17	829	14	67.4	1.16E+00	PB-211
2	838.53	293	672	1.72	838.62	829	14	29.0		
0	896.65	76	825	2.06	896.75	894	6	121.3		Y-88
0	903.01	104	774	1.88	903.11	901	6	86.6		
0	910.15*	143	1026	2.14	910.24	907	8	79.2		
4	928.40	73	243	3.20	928.49	928	14	55.3	2.56E+00	
4	933.39*	1505	715	1.84	933.48	928	14	7.6		
0	963.03	169	833	2.04	963.12	960	7	58.5		
0	1000.20*	204	976	1.98	1000.29	996	9	57.2		PA-234M
0	1051.09	102	621	2.27	1051.18	1048	7	82.9		
0	1069.50	134	798	1.86	1069.58	1066	9	78.2		
0	1103.60	144	718	2.66	1103.69	1099	8	66.5		
0	1119.50*	6294	907	2.18	1119.59	1115	10	3.1		BI-214
4	1132.10	179	634	3.11	1132.19	1127	14	53.8	2.60E+00	
4	1137.09	77	578	2.61	1137.18	1127	14	112.0		
0	1154.65	685	915	2.17	1154.74	1150	11	18.8		
0	1181.76	105	586	1.75	1181.85	1178	8	82.4		
0	1198.53	74	367	3.24	1198.62	1196	6	84.8		
0	1206.62	269	706	1.94	1206.70	1202	11	40.1		
0	1237.30*	2263	753	2.16	1237.38	1233	10	6.2		
0	1252.75	146	599	4.87	1252.83	1248	9	62.9		
0	1280.18	636	557	2.38	1280.27	1276	9	15.6		
2	1376.75*	1639	371	2.21	1376.83	1370	20	6.3	1.40E+00	
2	1384.29	378	402	2.70	1384.37	1370	20	21.4		
4	1400.54	479	388	2.09	1400.62	1395	18	15.9	8.32E-01	
4	1407.00*	830	454	2.22	1407.08	1395	18	11.0		
0	1459.74*	746	589	2.40	1459.82	1455	10	14.2		K-40
0	1508.29	725	726	2.56	1508.37	1502	11	16.2		
2	1537.75	193	398	2.33	1537.83	1532	16	36.7	1.38E+00	
2	1542.54	197	403	2.78	1542.62	1532	16	40.2		
0	1581.69	250	618	2.71	1581.77	1576	13	42.9		
0	1592.99	64	294	1.80	1593.07	1591	6	87.8		
0	1598.62	103	314	2.38	1598.70	1596	7	61.0		
0	1659.88	379	371	2.55	1659.95	1653	14	23.9		
0	1682.22	82	190	4.54	1682.30	1676	11	68.5		
0	1692.01	136	198	4.65	1692.08	1687	11	43.7		
2	1722.93	28	20	2.37	1723.00	1722	14	33.7	1.66E+00	
2	1728.46	1106	138	2.52	1728.54	1722	14	7.1		
0	1763.28*	5139	263	2.54	1763.35	1756	14	3.1		BI-214
0	1817.81	24	64	2.44	1817.88	1815	6	115.9		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	1837.13	125	160	3.21	1837.20	1832	20	38.2	1.90E+00	Y-88
3	1846.32	727	87	2.76	1846.39	1832	20	8.7		
0	1853.81	28	66	2.74	1853.88	1852	6	98.9		
0	1872.76	82	147	2.89	1872.83	1868	10	60.0		
0	1935.89	77	162	2.09	1935.96	1930	12	69.6		
0	1966.80	50	88	4.50	1966.86	1963	8	71.3		
0	2008.56	41	80	5.15	2008.62	2005	9	84.8		
0	2020.69	126	108	13.23	2020.75	2013	19	45.0		
0	2052.58	30	79	2.82	2052.65	2048		9114.8		
2	2108.77	34	28	3.03	2108.83	2105	27	60.7	1.68E+00	
2	2117.05	335	28	2.62	2117.11	2105	27	12.2		
0	2202.56*	1388	33	2.90	2202.62	2198	12	5.6		
0	2256.81	12	5	0.99	2256.87	2254	5	77.7		
0	2268.92	53	19	13.94	2268.98	2260	19	48.1		
0	2292.84	97	50	2.28	2292.90	2286	14	37.6		
0	2329.89	10	7	1.96	2329.95	2327		6109.9		
0	2419.21	10	2	2.00	2419.26	2416	7	78.9		
0	2445.87	365	9	3.10	2445.92	2440	12	11.0		
0	2495.11	6	0	1.98	2495.17	2492	6	81.6		
0	2613.07*	51	0	1.97	2613.12	2609	10	30.3		
0	2767.45	10	0	1.45	2767.50	2763	8	63.2		

Total number of lines in spectrum 107
Number of unidentified lines 61
Number of lines tentatively identified by NID 46 42.99%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/GRAM	pCi/GRAM	2-Sigma Error	%Error	
K-40	1.28E+09Y	1.00	2.211E+01	2.211E+01	0.381E+01	17.23	
PB-210	22.26Y	1.00	3.895E+01	3.905E+01	0.664E+01	17.01	
PB-211	3.28E+04Y	1.00	1.017E+01	1.017E+01	0.417E+01	41.01	
BI-214	1602.00Y	1.00	1.082E+02	1.082E+02	0.067E+02	6.17	
PB-214	1602.00Y	1.00	1.098E+02	1.098E+02	0.125E+02	11.40	
RN-219	3.28E+04Y	1.00	6.832E+00	6.832E+00	3.034E+00	44.41	
RA-223	3.28E+04Y	1.00	5.253E+00	5.253E+00	4.111E+00	78.25	
RA-224	1.41E+10Y	1.00	2.209E+02	2.209E+02	0.346E+02	15.67	
RA-226	1602.00Y	1.00	1.995E+02	1.995E+02	3.656E+02	183.30	
PA-234M	4.47E+09Y	1.00	5.318E+01	5.318E+01	3.086E+01	58.02	
TH-234	4.47E+09Y	1.00	5.330E+01	5.330E+01	0.877E+01	16.46	
U-235	7.04E+08Y	1.00	4.943E+00	4.943E+00	1.727E+00	34.94	
Total Activity :			8.331E+02	8.332E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/GRAM	pCi/GRAM	2-Sigma Error	%Error	
CO-57	270.90D	1.08	1.949E-01	2.102E-01	2.423E-01	115.26	
Y-88	106.60D	1.21	3.458E-01	4.188E-01	1.693E-01	40.42	
CD-109	464.00D	1.04	3.308E+01	3.456E+01	0.785E+01	22.70	
SN-126	1.00E+05Y	1.00	3.327E+00	3.327E+00	0.728E+00	21.90	
Total Activity :			3.694E+01	3.852E+01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/GRAM	pCi/GRAM	2-Sigma Error	%Error	
AM-243	7380.00Y	1.00	1.221E+01	1.221E+01	0.121E+01	9.91	
Total Activity :			1.221E+01	1.221E+01			

Grand Total Activity : 8.823E+02 8.840E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma	Status
				pCi/GRAM	pCi/GRAM	%Error	
K-40	1460.81	10.67*	4.705E-01	2.211E+01	2.211E+01	17.23	OK
Final Mean for 1 Valid Peaks = 2.211E+01+/- 3.809E+00 (17.23%)							
PB-210	46.50	4.25*	1.969E+00	3.895E+01	3.905E+01	17.01	OK
Final Mean for 1 Valid Peaks = 3.905E+01+/- 6.642E+00 (17.01%)							
PB-211	404.84	2.90*	1.290E+00	1.191E+01	1.191E+01	50.31	OK
	831.96	2.90	7.168E-01	8.535E+00	8.535E+00	68.08	OK
Final Mean for 2 Valid Peaks = 1.017E+01+/- 4.171E+00 (41.01%)							
BI-214	609.31	46.30*	9.260E-01	1.018E+02	1.018E+02	10.44	OK
	1120.29	15.10	5.678E-01	1.092E+02	1.092E+02	11.20	OK
	1764.49	15.80	4.183E-01	1.156E+02	1.156E+02	10.43	OK
	2204.22	4.98	3.725E-01	-----	Line Not Found	-----	Absent
Final Mean for 3 Valid Peaks = 1.082E+02+/- 6.677E+00 (6.17%)							
PB-214	295.21	19.19	1.631E+00	1.092E+02	1.092E+02	18.66	OK
	351.92	37.19*	1.436E+00	1.102E+02	1.102E+02	14.39	OK
Final Mean for 2 Valid Peaks = 1.098E+02+/- 1.252E+01 (11.40%)							
RN-219	401.80	6.50*	1.298E+00	6.832E+00	6.832E+00	44.41	OK
Final Mean for 1 Valid Peaks = 6.832E+00+/- 3.034E+00 (44.41%)							
RA-223	323.87	3.88*	1.527E+00	5.253E+00	5.253E+00	78.25	OK
Final Mean for 1 Valid Peaks = 5.253E+00+/- 4.111E+00 (78.25%)							
RA-224	240.98	3.95*	1.863E+00	2.209E+02	2.209E+02	15.67	OK
Final Mean for 1 Valid Peaks = 2.209E+02+/- 3.460E+01 (15.67%)							
RA-226	186.21	3.28*	2.147E+00	1.995E+02	1.995E+02	183.30	OK
Final Mean for 1 Valid Peaks = 1.995E+02+/- 3.656E+02 (183.30%)							
PA-234M	1001.03	0.92*	6.188E-01	5.318E+01	5.318E+01	58.02	OK
Final Mean for 1 Valid Peaks = 5.318E+01+/- 3.086E+01 (58.02%)							
TH-234	63.29	3.80*	2.351E+00	5.330E+01	5.330E+01	16.46	OK
Final Mean for 1 Valid Peaks = 5.330E+01+/- 8.771E+00 (16.46%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma		%Error	Status
				pCi/GRAM	pCi/GRAM		
U-235	143.76	10.50*	2.382E+00	5.594E+00	5.594E+00	40.24	OK
	163.35	4.70	2.275E+00	4.201E+00	4.201E+00	93.13	OK
	205.31	4.70	2.043E+00	3.843E+00	3.843E+00	96.51	OK

Final Mean for 3 Valid Peaks = 4.943E+00+/- 1.727E+00 (34.94%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma		%Error	Status
				pCi/GRAM	pCi/GRAM		
CO-57	122.06	85.51*	2.486E+00	1.949E-01	2.102E-01	115.26	OK
	136.48	10.60	2.420E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 2.102E-01+/- 2.423E-01 (115.26%)

Y-88	898.02	93.40	6.741E-01	1.803E-01	2.184E-01	121.69	OK
	1836.01	99.38*	4.090E-01	4.586E-01	5.555E-01	39.52	OK

Final Mean for 2 Valid Peaks = 4.188E-01+/- 1.693E-01 (40.42%)

CD-109	88.03	3.72*	2.541E+00	3.308E+01	3.456E+01	22.70	OK
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Final Mean for 1 Valid Peaks = 3.456E+01+/- 7.846E+00 (22.70%)

SN-126	87.57	37.00*	2.540E+00	3.327E+00	3.327E+00	21.90	OK
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Final Mean for 1 Valid Peaks = 3.327E+00+/- 7.285E-01 (21.90%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma		%Error	Status
				pCi/GRAM	pCi/GRAM		
AM-243	74.67	66.00*	2.478E+00	1.221E+01	1.221E+01	9.91	OK

Final Mean for 1 Valid Peaks = 1.221E+01+/- 1.210E+00 (9.91%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.211E+01	3.809E+00	2.894E+00	2.555E-01	7.642
CO-57	2.102E-01	2.423E-01	2.988E-01	3.654E-02	0.704
Y-88	4.188E-01	1.693E-01	2.309E-01	2.124E-02	1.814
CD-109	3.456E+01	7.846E+00	8.694E+00	9.932E-01	3.976
SN-126	3.327E+00	7.285E-01	8.365E-01	8.139E-02	3.977
PB-210	3.905E+01	6.642E+00	7.504E+00	6.523E-01	5.204
PB-211	1.017E+01	4.171E+00	8.942E+00	8.770E-01	1.138
BI-214	1.082E+02	6.677E+00	5.232E-01	4.999E-02	206.834
PB-214	1.098E+02	1.252E+01	6.446E-01	8.876E-02	170.398
RN-219	6.832E+00	3.034E+00	3.963E+00	3.882E-01	1.724
RA-223	5.253E+00	4.111E+00	6.119E+00	9.869E-01	0.859
RA-224	2.209E+02	3.460E+01	6.199E+00	9.266E-01	35.631
RA-226	1.995E+02	3.656E+02	8.046E+00	1.474E+01	24.792
PA-234M	5.318E+01	3.086E+01	3.261E+01	2.992E+00	1.631
TH-234	5.330E+01	8.771E+00	8.520E+00	6.569E-01	6.255
U-235	4.943E+00	1.727E+00	2.476E+00	4.566E-01	1.996
AM-243	1.221E+01	1.210E+00	4.718E-01	4.039E-02	25.878

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.596E+00		2.247E+00	3.540E+00	3.537E-01	0.733
NA-22	6.440E-04		2.006E-01	2.950E-01	2.680E-02	0.002
AL-26	6.129E-02		1.062E-01	1.836E-01	1.684E-02	0.334
TI-44	4.152E-01	+	1.388E-01	3.559E-01	2.858E-02	1.167
SC-46	7.834E-02		2.566E-01	3.881E-01	3.292E-02	0.202
V-48	-5.970E-01		6.188E-01	1.001E+00	9.060E-02	-0.596
CR-51	-1.295E+00		3.562E+00	5.111E+00	8.517E-01	-0.253
MN-54	-6.589E-02		1.850E-01	3.083E-01	2.702E-02	-0.214
CO-56	1.469E-01		2.411E-01	3.694E-01	3.218E-02	0.398
CO-58	-1.888E-01		2.411E-01	3.533E-01	3.140E-02	-0.534
FE-59	3.030E-01		5.784E-01	8.722E-01	9.134E-02	0.347
CO-60	2.861E-02		1.987E-01	2.962E-01	3.063E-02	0.097
ZN-65	6.549E+00		9.182E-01	1.116E+00	1.113E-01	5.866
SE-75	-1.700E-01		3.767E-01	4.749E-01	8.302E-02	-0.358
RB-82	1.062E+00		3.673E+00	4.469E+00	4.013E-01	0.238
RB-83	1.217E-01		3.754E-01	6.475E-01	1.063E-01	0.188
KR-85	2.586E+01		3.600E+01	5.639E+01	5.622E+00	0.459
SR-85	1.541E-01		2.145E-01	3.360E-01	3.351E-02	0.459
NB-93M	-8.329E+00		8.547E+00	1.324E+01	5.227E+00	-0.629
NB-94	-5.545E-02		1.701E-01	2.831E-01	2.430E-02	-0.196
NB-95	8.387E+00		9.360E-01	9.252E-01	8.337E-02	9.065
ZR-95	-2.551E-01		5.503E-01	6.446E-01	6.359E-02	-0.396
RU-103	-4.434E-02		2.528E-01	4.333E-01	6.515E-02	-0.102
RU-106	1.974E-01		1.445E+00	2.475E+00	3.444E-01	0.080
AG-108M	9.928E-02		1.856E-01	2.862E-01	2.600E-02	0.347
AG-110M	2.912E-03		1.759E-01	2.691E-01	2.460E-02	0.011

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-113	-1.393E-01		2.952E-01	4.566E-01	4.557E-02	-0.305
TE123M	-9.374E-02		2.862E-01	3.720E-01	3.357E-02	-0.252
SB-124	8.967E-02		2.346E-01	3.630E-01	3.485E-02	0.247
I-125	-2.584E+00		4.205E+00	7.000E+00	7.815E-01	-0.369
SB-125	5.729E-01		5.387E-01	9.364E-01	9.405E-02	0.612
SB-126	4.058E+00	+	2.130E+00	2.685E+00	2.440E-01	1.511
SB-127	9.500E+01		8.240E+01	1.427E+02	1.300E+01	0.666
I-129	8.400E-02		4.386E-01	6.869E-01	9.503E-02	0.122
I-131	-1.426E+00		2.104E+00	3.607E+00	4.540E-01	-0.395
BA-133	1.311E-01		2.697E-01	3.915E-01	6.543E-02	0.335
CS-134	1.668E+00		2.634E-01	3.570E-01	3.429E-02	4.672
CS-135	6.030E+00		1.495E+00	1.714E+00	3.060E-01	3.517
CS-136	1.140E+00		1.144E+00	1.758E+00	1.712E-01	0.648
CS-137	4.861E-01		1.970E-01	3.132E-01	2.855E-02	1.552
LA-138	-4.361E-02		2.861E-01	4.662E-01	3.976E-02	-0.094
CE-139	1.765E-01		2.516E-01	3.761E-01	3.155E-02	0.469
BA-140	-1.396E+00		2.835E+00	4.749E+00	1.591E+00	-0.294
LA-140	2.513E+00		1.411E+00	1.796E+00	1.592E-01	1.400
CE-141	1.937E+00		8.479E-01	1.066E+00	2.647E-01	1.818
CE-144	5.398E-02		1.519E+00	2.467E+00	2.776E-01	0.022
PM-144	1.853E-01		1.697E-01	2.658E-01	2.423E-02	0.697
PM-145	-1.243E-02		8.686E-01	1.457E+00	9.528E-01	-0.009
PM-146	9.105E-01	+	6.206E-01	6.510E-01	6.487E-02	1.398
ND-147	4.479E+00		6.868E+00	1.189E+01	1.181E+00	0.377
EU-152	1.720E+01	+	2.734E+00	3.469E+00	3.742E-01	4.957
GD-153	-7.636E-01		7.066E-01	1.137E+00	1.221E-01	-0.672
EU-154	-1.072E-02		5.559E-01	8.166E-01	7.420E-02	-0.013
EU-155	2.062E+00		7.790E-01	1.158E+00	1.114E-01	1.781
EU-156	-3.316E+00		6.626E+00	9.766E+00	2.240E+00	-0.340
HO-166M	-6.132E-02		3.294E-01	4.548E-01	4.137E-02	-0.135
HF-172	7.421E-01		1.467E+00	2.211E+00	2.633E-01	0.336
LU-172	-1.643E-01		6.595E+00	9.770E+00	9.591E-01	-0.017
LU-173	5.469E+00		1.305E+00	1.385E+00	2.532E-01	3.950
HF-175	-2.859E-01		3.299E-01	4.029E-01	5.854E-02	-0.710
LU-176	-2.337E-01		1.682E-01	2.516E-01	4.373E-02	-0.929
TA-182	5.335E+01		5.972E+00	3.386E+00	3.387E-01	15.755
IR-192	1.166E-01		4.247E-01	6.624E-01	6.613E-02	0.176
HG-203	-1.217E-01		3.392E-01	4.898E-01	9.410E-02	-0.248
BI-207	-8.360E-02		1.641E-01	2.488E-01	2.436E-02	-0.336
TL-208	5.793E-01		5.324E-01	8.376E-01	8.142E-02	0.692
BI-210M	1.530E-01		4.160E-01	5.346E-01	9.175E-02	0.286
BI-212	1.838E-01		1.414E+00	2.156E+00	1.958E-01	0.085
PB-212	4.244E+00		7.528E-01	6.815E-01	1.002E-01	6.228
RA-225	-2.035E+00		2.496E+00	3.825E+00	3.779E-01	-0.532
TH-227	8.391E+00	+	1.946E+00	2.429E+00	3.509E-01	3.455
AC-228	1.155E+00	+	9.211E-01	1.156E+00	9.855E-02	0.999
TH-230	1.059E+02	+	3.542E+01	9.066E+01	7.267E+00	1.169
PA-231	6.462E+00		7.356E+00	1.070E+01	1.890E+00	0.604

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-231	2.541E+00	+	2.524E+00	3.398E+00	5.844E-01	0.748
PA-233	4.200E-01		8.444E-01	1.329E+00	3.565E-01	0.316
PA-234	1.586E-02		7.449E-01	1.210E+00	1.385E-01	0.013
NP-237	5.005E+00		1.889E+00	2.808E+00	2.702E-01	1.783
AM-241	2.561E+00		6.018E-01	8.945E-01	6.686E-02	2.863
CM-243	-2.589E-01		1.198E+00	1.738E+00	3.287E-01	-0.149

Total number of lines in spectrum 107
Number of unidentified lines 61
Number of lines tentatively identified by NID 46 42.99%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.211E+01	2.211E+01	0.381E+01	17.23	
PB-210	22.26Y	1.00	3.895E+01	3.905E+01	0.664E+01	17.01	
PB-211	3.28E+04Y	1.00	1.017E+01	1.017E+01	0.417E+01	41.01	
BI-214	1602.00Y	1.00	1.082E+02	1.082E+02	0.067E+02	6.17	
PB-214	1602.00Y	1.00	1.098E+02	1.098E+02	0.125E+02	11.40	
RN-219	3.28E+04Y	1.00	6.832E+00	6.832E+00	3.034E+00	44.41	
RA-223	3.28E+04Y	1.00	5.253E+00	5.253E+00	4.111E+00	78.25	
RA-224	1.41E+10Y	1.00	2.209E+02	2.209E+02	0.346E+02	15.67	
RA-226	1602.00Y	1.00	1.995E+02	1.995E+02	3.656E+02	183.30	
PA-234M	4.47E+09Y	1.00	5.318E+01	5.318E+01	3.086E+01	58.02	
TH-234	4.47E+09Y	1.00	5.330E+01	5.330E+01	0.877E+01	16.46	
U-235	7.04E+08Y	1.00	4.943E+00	4.943E+00	1.727E+00	34.94	
Total Activity :			8.331E+02	8.332E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.08	1.949E-01	2.102E-01	2.423E-01	115.26	
Y-88	106.60D	1.21	3.458E-01	4.188E-01	1.693E-01	40.42	
CD-109	464.00D	1.04	3.308E+01	3.456E+01	0.785E+01	22.70	
SN-126	1.00E+05Y	1.00	3.327E+00	3.327E+00	0.728E+00	21.90	
Total Activity :			3.694E+01	3.852E+01			

Nuclide Type : ACTIVATION

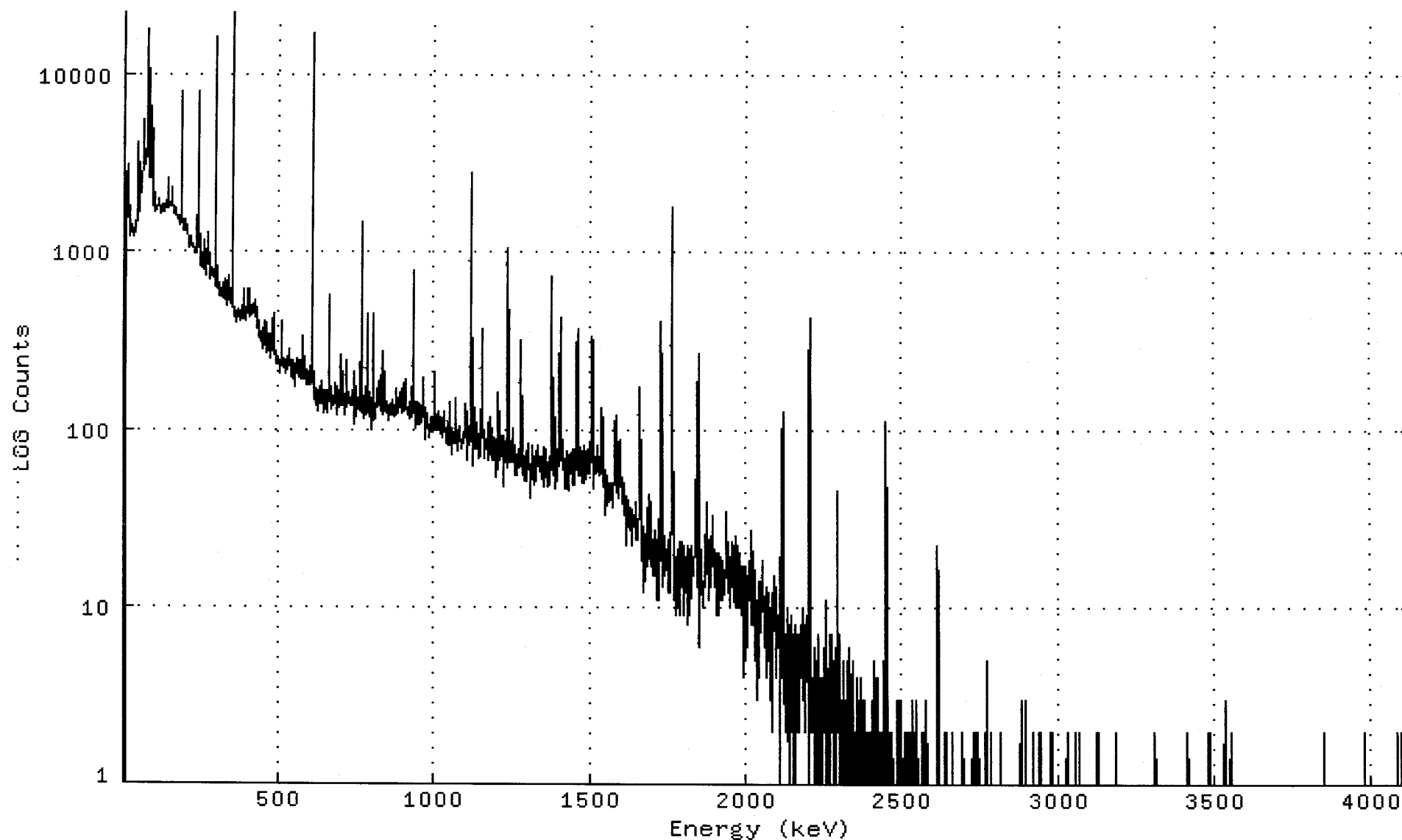
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-243	7380.00Y	1.00	1.221E+01	1.221E+01	0.121E+01	9.91	
Total Activity :			1.221E+01	1.221E+01			

Grand Total Activity : 8.823E+02 8.840E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

2000



Channel

1:	0	0	0	1	0	714	2062	2612
9:	2574	2735	1984	3038	2442	1546	1619	1910
17:	1638	1427	1491	1335	1265	1218	1300	1346
25:	1355	1354	1410	1386	1240	1291	1268	1326
33:	1334	1201	1295	1397	1408	1338	1339	1459
41:	1477	1547	1645	1674	1768	3815	4124	1662
49:	1857	2319	2020	2084	3149	2445	2100	2191
57:	2325	2553	2709	2863	3057	3258	5457	4122
65:	3126	3061	3460	3712	3211	3271	3331	3322
73:	3585	6431	11081	5993	17815	6314	3564	3158
81:	3503	2569	3041	4560	2541	2949	6531	4348
89:	2864	3799	2421	4050	4853	2499	2548	1799
97:	1833	2116	1803	1808	1658	1708	1742	1732
105:	1678	1761	1730	1789	1842	1794	1855	1915
113:	1985	1828	1799	1695	1696	1733	1660	1635
121:	1686	1739	1768	1811	1695	1669	1724	1791
129:	1670	1695	1807	1749	1756	1728	1733	1734
137:	1778	1813	1895	1737	1787	1767	1964	2539
145:	1929	1801	1868	1771	1811	1810	1881	1855
153:	1927	2272	1928	1848	1793	1765	1633	1720
161:	1714	1745	1767	1707	1607	1594	1586	1575
169:	1577	1538	1577	1512	1497	1510	1502	1508
177:	1408	1508	1493	1541	1478	1592	1609	1538
185:	3196	7827	2884	1424	1489	1461	1384	1381
193:	1292	1395	1406	1492	1441	1377	1286	1323
201:	1303	1330	1271	1221	1404	1264	1161	1122
209:	1167	1153	1131	1039	1156	1199	1086	1136
217:	1092	1068	1089	1048	1067	1072	1106	1036
225:	1049	1014	1025	1028	1037	966	1005	977
233:	1019	992	1219	1581	1037	1228	1183	1045
241:	3512	7905	1837	834	815	829	817	860
249:	839	830	853	842	859	791	835	1116
257:	909	1066	1148	813	783	748	801	766
265:	726	759	760	818	1266	1147	1239	914
273:	845	983	962	723	717	722	694	761
281:	762	728	776	742	738	801	754	710
289:	735	762	729	701	763	4362	16106	4657
297:	678	628	699	810	605	675	682	642
305:	653	614	557	550	584	576	629	571
313:	603	609	549	606	586	615	570	545
321:	561	569	625	692	525	544	534	572
329:	666	665	583	490	610	611	560	529
337:	636	729	608	539	548	592	539	579
345:	579	507	606	617	641	1262	14876	22493
353:	2680	483	474	452	435	421	438	424
361:	452	389	440	404	437	418	447	427
369:	444	464	449	434	407	424	435	401
377:	450	455	416	447	432	495	457	416
385:	454	529	578	583	614	417	398	439
393:	423	445	435	472	439	446	456	444
401:	611	589	469	505	605	504	441	427
409:	453	435	446	471	460	447	487	495
417:	455	448	452	497	468	451	451	476
425:	418	450	525	436	391	385	398	363

433:	387	332	401	320	327	365	357	330
441:	331	321	327	329	348	325	277	321
449:	298	322	313	365	367	371	406	296
457:	293	310	305	294	349	397	339	265
465:	300	280	309	275	294	339	281	283
473:	245	341	303	273	271	314	308	416
481:	336	272	267	259	278	377	444	281
489:	276	263	233	262	232	255	250	231
497:	233	237	247	253	253	235	225	241
505:	220	225	202	244	347	407	366	326
513:	243	219	245	240	222	233	246	235
521:	228	211	240	226	204	218	234	253
529:	217	230	227	227	281	257	230	248
537:	222	247	218	194	204	214	243	240
545:	200	237	223	239	190	218	223	172
553:	204	228	191	210	204	248	214	204
561:	207	218	193	210	221	242	196	197
569:	195	204	220	234	241	202	187	198
577:	187	206	273	335	224	235	253	202
585:	187	190	201	176	211	175	204	185
593:	194	178	201	176	190	207	197	177
601:	185	223	195	218	215	180	610	7827
609:	16872	4644	304	147	152	164	159	173
617:	165	149	136	152	165	157	166	164
625:	125	157	157	134	135	162	158	157
633:	173	141	139	140	144	159	185	157
641:	171	147	122	133	157	152	162	161
649:	163	138	163	132	149	128	139	122
657:	136	157	139	165	156	146	141	344
665:	565	328	140	155	145	132	127	171
673:	135	134	147	151	150	139	141	146
681:	159	165	180	156	138	170	157	162
689:	145	153	118	139	145	155	165	139
697:	165	136	150	150	172	258	255	175
705:	145	133	156	157	136	167	149	130
713:	138	125	127	119	139	132	230	241
721:	131	166	150	140	139	160	157	140
729:	136	133	141	136	144	147	140	136
737:	143	133	164	138	196	209	183	129
745:	140	105	122	146	132	149	145	172
753:	168	136	147	128	142	143	140	132
761:	155	126	133	130	188	292	898	1463
769:	556	148	127	112	125	133	134	151
777:	114	130	147	139	134	120	144	210
785:	447	388	176	128	123	127	116	117
793:	135	119	158	129	121	138	147	124
801:	130	98	120	160	387	439	210	127
809:	124	113	127	128	138	129	142	135
817:	148	130	144	156	184	136	144	145
825:	136	173	145	149	126	144	198	182
833:	121	136	120	140	142	253	270	159
841:	124	124	142	143	144	132	132	130
849:	142	137	132	111	126	117	134	127
857:	118	123	139	132	120	127	121	144
865:	146	120	129	121	143	117	124	129
873:	130	127	135	118	146	157	139	140
881:	167	168	123	149	132	128	144	138
889:	145	130	161	140	148	138	152	164
897:	169	134	144	123	142	136	179	166
905:	131	124	129	135	143	180	189	141

913:	126	129	130	127	119	126	134	126
921:	127	142	113	119	129	127	120	124
929:	165	117	126	236	771	734	224	137
937:	131	110	141	110	100	133	114	140
945:	120	105	119	126	108	138	105	123
953:	127	127	125	121	108	125	115	115
961:	135	136	177	193	130	116	128	127
969:	132	114	107	86	116	100	100	122
977:	108	105	106	117	99	103	99	98
985:	88	105	108	115	102	117	95	117
993:	98	108	115	109	114	112	122	207
1001:	201	113	106	98	113	115	120	110
1009:	98	109	109	98	103	108	125	99
1017:	99	103	108	98	93	116	94	110
1025:	101	89	92	90	95	96	124	98
1033:	112	102	101	101	92	99	82	93
1041:	94	93	81	87	92	107	90	80
1049:	84	111	141	130	95	82	101	100
1057:	95	71	93	83	86	91	86	82
1065:	96	82	103	93	147	142	83	105
1073:	90	87	90	78	97	75	102	94
1081:	85	101	98	87	86	87	85	77
1089:	86	83	82	87	88	96	88	84
1097:	101	109	88	92	108	120	138	114
1105:	104	98	67	108	96	104	91	104
1113:	95	101	81	87	118	618	2420	2734
1121:	836	125	101	85	96	74	62	90
1129:	95	95	106	128	130	92	79	82
1137:	108	76	87	68	79	78	76	92
1145:	89	94	69	91	99	82	77	101
1153:	164	319	363	146	89	94	97	68
1161:	87	82	84	82	87	76	80	76
1169:	82	79	78	109	68	66	82	77
1177:	80	71	80	89	93	115	89	87
1185:	67	76	78	76	83	82	85	68
1193:	67	88	68	63	75	87	78	85
1201:	53	63	79	65	91	114	159	99
1209:	67	89	78	71	68	74	90	69
1217:	85	82	78	80	47	66	67	91
1225:	67	77	66	78	73	64	79	90
1233:	60	80	87	363	1052	907	246	87
1241:	71	65	86	66	75	73	68	69
1249:	64	73	101	93	98	92	91	64
1257:	66	69	80	54	64	75	57	58
1265:	60	54	71	69	62	67	64	60
1273:	66	77	70	62	62	81	192	319
1281:	254	90	70	63	54	74	70	68
1289:	69	51	66	56	63	66	75	60
1297:	56	65	51	66	73	59	83	60
1305:	72	54	63	59	60	59	41	65
1313:	73	55	56	81	64	70	58	66
1321:	48	65	63	61	64	57	51	60
1329:	74	72	67	80	62	68	76	75
1337:	63	70	57	66	69	68	57	62
1345:	62	63	52	69	59	64	49	47
1353:	62	78	53	75	73	55	77	66
1361:	57	55	63	59	64	61	47	62
1369:	63	50	69	48	60	59	152	545
1377:	719	386	94	55	61	67	97	194
1385:	160	84	73	56	50	48	46	61

1393:	51	77	52	61	74	61	116	224
1401:	269	122	75	67	83	248	424	277
1409:	108	72	62	66	64	58	60	61
1417:	65	60	65	46	53	68	46	71
1425:	74	64	73	66	69	64	66	45
1433:	49	72	56	62	61	68	73	61
1441:	48	76	69	53	60	52	62	77
1449:	66	48	68	72	66	58	64	71
1457:	64	99	260	367	230	75	63	54
1465:	60	54	58	62	72	79	57	50
1473:	67	69	52	67	72	81	64	66
1481:	49	59	58	52	53	58	55	67
1489:	73	77	75	64	62	56	64	64
1497:	56	69	84	71	77	74	67	75
1505:	64	88	204	332	301	122	78	46
1513:	67	54	69	62	68	66	56	66
1521:	64	57	63	80	58	65	62	55
1529:	66	57	70	58	66	73	56	68
1537:	117	132	80	69	72	112	117	76
1545:	47	54	33	56	42	59	42	50
1553:	54	40	41	37	41	49	46	44
1561:	46	39	47	42	42	43	41	40
1569:	50	43	49	36	44	47	46	48
1577:	57	53	65	54	106	120	94	59
1585:	63	44	56	49	47	42	41	55
1593:	85	71	59	47	62	87	80	57
1601:	46	38	41	39	53	41	49	34
1609:	50	33	33	39	38	42	40	41
1617:	22	38	40	33	34	35	35	29
1625:	27	36	27	28	35	34	32	32
1633:	22	28	35	24	31	33	29	29
1641:	29	32	28	30	24	29	24	39
1649:	30	31	24	29	24	27	28	33
1657:	32	39	107	172	137	54	28	18
1665:	28	23	30	16	28	24	12	21
1673:	19	22	16	16	23	14	19	20
1681:	33	31	35	36	28	17	20	26
1689:	27	30	42	43	36	37	28	27
1697:	17	18	20	17	24	15	23	16
1705:	27	19	19	18	17	20	11	23
1713:	17	13	11	24	11	20	24	18
1721:	22	18	31	18	19	51	162	377
1729:	400	179	43	16	17	22	13	17
1737:	20	25	24	15	21	16	19	16
1745:	19	18	21	12	24	19	19	20
1753:	23	23	12	18	22	26	17	37
1761:	174	828	1801	1704	587	123	27	23
1769:	21	25	11	15	12	19	14	9
1777:	14	13	15	17	21	15	16	10
1785:	18	23	15	12	9	15	14	16
1793:	23	15	13	15	12	14	22	21
1801:	10	9	18	12	13	19	13	16
1809:	15	22	8	11	15	11	14	9
1817:	21	19	16	9	10	12	14	15
1825:	22	19	18	17	19	17	18	17
1833:	15	23	28	35	51	52	25	15
1841:	13	16	17	35	132	264	224	74
1849:	37	13	6	7	19	21	20	12
1857:	15	14	14	12	13	10	13	11
1865:	15	16	19	16	15	17	39	37

1873:	29	24	22	16	14	11	24	15
1881:	20	15	14	17	13	20	20	22
1889:	29	24	24	18	17	28	33	14
1897:	13	14	14	13	17	20	12	15
1905:	9	13	20	20	13	16	13	9
1913:	11	19	15	11	15	12	12	18
1921:	17	15	18	13	11	12	13	16
1929:	13	15	14	15	23	18	34	31
1937:	17	18	19	23	12	14	17	23
1945:	15	11	16	10	16	19	17	17
1953:	13	23	16	17	21	20	13	21
1961:	22	11	10	15	19	17	22	25
1969:	20	10	13	16	12	14	15	10
1977:	13	13	20	16	15	14	14	9
1985:	17	15	14	13	8	15	4	16
1993:	17	16	10	11	13	17	5	11
2001:	12	15	12	6	9	13	14	18
2009:	18	16	15	10	8	12	17	27
2017:	24	18	15	11	8	10	8	8
2025:	15	11	6	16	10	6	4	3
2033:	4	11	8	6	9	11	9	4
2041:	14	5	10	14	11	13	13	8
2049:	12	12	14	18	17	12	7	9
2057:	6	8	7	11	12	10	13	4
2065:	12	9	5	12	7	6	11	7
2073:	8	10	3	9	5	8	7	6
2081:	7	5	2	12	7	13	15	10
2089:	10	10	9	6	4	5	13	9
2097:	7	9	9	9	6	6	6	7
2105:	1	4	11	19	14	11	6	7
2113:	6	4	21	81	126	88	23	12
2121:	6	4	2	4	6	7	3	5
2129:	6	10	2	4	7	3	1	5
2137:	4	8	5	5	9	5	6	2
2145:	3	9	5	3	7	1	3	6
2153:	1	3	8	7	4	4	4	3
2161:	2	3	3	5	7	2	5	7
2169:	6	3	6	6	4	4	6	8
2177:	6	3	6	6	9	6	10	6
2185:	6	4	4	8	2	7	9	4
2193:	6	7	7	7	8	0	15	57
2201:	183	420	413	237	80	9	6	2
2209:	2	2	4	2	2	3	4	1
2217:	2	3	6	3	4	0	3	2
2225:	5	3	3	5	1	0	7	2
2233:	0	2	4	3	4	2	4	1
2241:	3	4	0	3	4	4	6	2
2249:	5	5	3	2	3	1	4	1
2257:	11	0	0	2	3	3	3	7
2265:	7	5	4	1	3	3	6	4
2273:	7	2	5	2	5	0	2	1
2281:	2	1	4	1	6	4	3	2
2289:	3	13	26	45	28	7	4	1
2297:	2	7	2	3	1	3	2	0
2305:	3	1	3	5	3	1	1	2
2313:	3	0	2	1	3	0	4	2
2321:	1	5	1	1	1	2	1	2
2329:	4	6	3	1	1	1	4	2
2337:	2	5	0	1	1	3	2	2
2345:	0	1	2	1	0	4	3	1

2353:	0	0	2	2	1	1	3	3
2361:	2	2	1	0	4	4	2	0
2369:	2	0	1	2	3	1	3	2
2377:	3	1	0	0	1	1	2	0
2385:	2	0	2	1	1	2	1	1
2393:	2	1	2	0	0	2	0	0
2401:	2	2	2	3	1	1	5	3
2409:	0	1	0	0	4	0	0	1
2417:	1	1	3	4	1	0	0	1
2425:	0	2	1	0	1	0	2	0
2433:	0	1	2	2	0	5	2	0
2441:	1	1	11	34	100	111	79	28
2449:	8	1	0	1	3	0	2	1
2457:	0	2	1	1	0	0	1	1
2465:	2	0	0	0	0	1	1	1
2473:	0	1	0	1	1	0	1	0
2481:	3	1	0	0	1	1	0	3
2489:	1	0	0	0	0	1	3	2
2497:	0	0	0	1	0	0	1	0
2505:	1	2	0	1	0	0	1	2
2513:	0	0	1	0	0	2	1	1
2521:	0	1	0	1	1	0	2	0
2529:	1	1	0	3	0	0	0	0
2537:	1	1	2	0	0	0	0	3
2545:	2	0	0	0	1	1	0	0
2553:	0	0	1	1	1	0	0	0
2561:	0	0	1	2	1	0	0	1
2569:	2	0	0	0	0	0	0	3
2577:	1	0	0	1	0	0	0	0
2585:	0	0	0	0	0	1	0	1
2593:	0	0	0	0	0	0	0	0
2601:	0	0	0	1	0	1	1	0
2609:	0	2	6	9	22	12	4	2
2617:	2	0	0	0	1	1	0	1
2625:	0	0	0	0	0	1	1	1
2633:	0	1	2	0	1	2	0	1
2641:	1	0	0	1	1	1	0	1
2649:	0	0	0	0	0	0	0	0
2657:	1	0	0	0	2	0	0	0
2665:	0	0	0	1	0	0	0	0
2673:	0	0	1	0	0	0	1	0
2681:	0	0	1	1	1	0	1	0
2689:	2	0	1	1	2	1	0	1
2697:	0	0	0	1	0	1	0	0
2705:	1	0	0	0	1	0	1	1
2713:	0	0	0	0	1	0	0	1
2721:	0	0	0	2	0	1	1	1
2729:	1	0	0	1	2	1	0	0
2737:	0	0	1	0	0	2	0	0
2745:	1	1	1	1	1	0	0	1
2753:	0	0	0	0	0	1	0	0
2761:	0	0	0	0	0	2	2	5
2769:	1	0	0	0	0	0	0	0
2777:	0	0	0	0	0	0	1	2
2785:	1	0	0	0	0	0	0	0
2793:	0	0	0	0	0	1	0	0
2801:	0	0	0	0	0	0	0	0
2809:	1	0	1	0	0	2	1	0
2817:	0	1	0	0	0	1	0	0
2825:	0	1	1	0	0	0	0	0

2833:	0	0	0	1	0	0	1	0
2841:	0	0	0	0	0	0	0	1
2849:	0	0	0	0	0	0	1	1
2857:	0	0	0	0	0	1	0	0
2865:	0	0	0	0	0	0	1	0
2873:	1	1	0	0	0	3	1	0
2881:	1	0	1	0	0	0	0	0
2889:	1	0	3	1	0	1	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	0	0	1	1	0	0
2913:	0	0	0	0	0	2	0	1
2921:	0	0	0	0	1	1	0	0
2929:	1	0	0	0	0	0	0	1
2937:	0	2	0	0	0	1	2	0
2945:	0	0	0	0	0	1	0	1
2953:	0	0	0	0	0	0	0	0
2961:	0	0	0	0	0	0	0	0
2969:	1	0	1	0	1	0	2	2
2977:	0	0	0	1	0	0	0	1
2985:	1	0	0	0	0	0	0	0
2993:	0	0	0	1	1	0	1	0
3001:	0	1	0	1	0	0	0	0
3009:	0	1	0	0	0	1	0	0
3017:	0	0	0	0	0	0	0	0
3025:	2	1	0	1	0	0	0	1
3033:	0	0	0	0	0	1	0	0
3041:	0	0	0	0	0	0	0	1
3049:	0	0	2	0	2	0	1	0
3057:	1	0	0	0	0	0	0	0
3065:	2	1	0	0	0	0	1	0
3073:	0	0	1	1	0	0	0	1
3081:	0	1	1	1	0	0	0	0
3089:	1	0	0	0	0	1	0	1
3097:	0	0	1	0	0	0	0	0
3105:	1	1	0	1	0	0	1	0
3113:	0	0	0	1	0	0	0	2
3121:	0	0	0	0	2	0	0	0
3129:	1	1	0	0	0	0	0	0
3137:	0	0	0	0	0	0	1	0
3145:	0	0	0	0	1	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	0	2	2	0	0	0
3185:	0	0	0	0	1	1	0	1
3193:	1	0	0	1	1	0	0	0
3201:	0	0	0	0	0	0	0	0
3209:	0	0	0	0	0	1	0	0
3217:	1	1	0	0	1	0	0	0
3225:	0	1	0	0	0	0	0	0
3233:	0	1	0	0	1	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	1	0	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	1
3273:	0	0	0	0	0	0	0	0
3281:	1	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	1	2	0	0	0	0	0

3313:	0	0	0	0	0	0	0	0
3321:	0	0	1	0	1	0	0	0
3329:	0	0	0	1	0	0	0	0
3337:	0	0	0	0	0	0	1	0
3345:	0	0	0	1	0	0	0	0
3353:	1	0	0	0	0	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	1	0	0	0	0	0
3377:	0	0	0	1	0	0	0	1
3385:	0	0	0	0	0	0	0	0
3393:	0	0	0	0	0	0	0	0
3401:	1	1	0	0	1	0	1	0
3409:	0	0	2	0	1	0	0	1
3417:	0	0	0	1	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	1	0	0
3441:	0	0	0	0	0	0	0	0
3449:	0	0	0	0	1	0	0	1
3457:	1	0	0	0	0	0	0	1
3465:	0	0	0	0	0	0	0	0
3473:	0	0	0	0	2	0	0	0
3481:	0	2	0	0	0	0	1	0
3489:	0	0	0	0	1	0	0	0
3497:	0	0	1	0	0	1	0	0
3505:	0	0	1	0	0	0	0	0
3513:	0	0	0	0	1	0	0	0
3521:	1	0	0	0	0	0	0	0
3529:	3	0	0	0	0	0	1	1
3537:	0	0	0	0	0	0	0	0
3545:	0	1	2	0	0	0	0	0
3553:	0	0	0	1	0	0	0	0
3561:	0	0	1	0	1	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	1	1	0	1
3585:	0	1	0	0	0	0	0	0
3593:	0	1	0	1	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	0	0	1	0	0	0
3641:	0	1	0	1	0	0	0	1
3649:	0	1	0	0	0	1	0	0
3657:	1	0	0	0	0	0	0	0
3665:	1	0	0	1	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	1	1	0	0	0	0	1
3689:	0	1	0	0	0	0	0	0
3697:	1	0	0	0	0	0	0	0
3705:	0	1	0	1	0	0	0	0
3713:	0	1	0	0	1	0	0	0
3721:	0	0	1	0	0	0	0	0
3729:	1	0	0	0	0	0	0	0
3737:	0	0	0	0	1	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	1	0	0	0	0	0
3761:	0	1	0	0	0	0	0	0
3769:	0	1	0	0	0	0	0	0
3777:	0	0	0	1	1	0	0	0
3785:	1	0	1	0	0	1	1	0

3793:	0	1	0	0	0	0	1	0
3801:	1	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	1	0	0	0	0
3825:	0	0	0	0	1	0	0	0
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	2	0	0
3849:	1	0	1	0	1	0	0	1
3857:	1	0	0	0	1	0	0	0
3865:	0	0	0	0	0	1	1	0
3873:	0	0	0	0	1	0	0	0
3881:	0	0	0	1	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	1	0	1	0
3913:	0	0	0	0	1	0	1	1
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	1	0
3937:	1	0	0	0	0	1	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	1	0	0	2	1	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	1	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0
4041:	0	0	0	1	0	0	0	0
4049:	0	0	1	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	1	0	0	0
4073:	0	0	0	1	0	2	0	0
4081:	0	0	1	0	0	0	0	0
4089:	1	0	0	2	0	1	0	0

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Sample ID : 1303013-04

Page : 1
Acquisition date : 1-APR-2013 11:36:59

VAX/VMS Peak Search Report Generated 1-APR-2013 12:37:34.94

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301304_GE2_GAS1202_190117.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : MQZ-35-130303
Deposition Date :
Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 11:36:59.
Sample ID : 1303013-04 Sample Quantity : 5.04860E+02 gram
Sample type : SOLID Sample Geometry : 0
Detector name : GE2 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:19.49 0.5%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	27.18	217	6430	1.52	27.30	25	5	111.8		
0	45.99*	2191	10718	1.64	46.10	44	5	14.0		PB-210
0	52.58*	1251	15099	1.16	52.70	50	7	33.0		
0	63.12*	3683	15111	1.40	63.23	61	5	10.5		TH-234
1	67.82	1040	12325	1.47	67.94	66	15	31.1	1.50E+03	
1	75.02*	13677	12816	1.48	75.13	66	15	2.9		AM-243
0	88.34*	1706	17145	1.10	88.45	85	5	23.6		SN-126 CD-109
0	92.93	3475	14692	1.61	93.05	91	6	11.6		
0	113.26	495	10632	1.70	113.38	111	6	66.5		
0	143.65*	1034	10584	1.29	143.76	141	6	32.1		U-235
0	154.27	881	10719	1.49	154.38	152	6	37.9		
0	185.87*	9528	11774	1.34	185.98	182	8	4.5		RA-226
0	196.53	305	8201	3.32	196.64	194	6	94.9		
0	204.48*	267	6083	1.47	204.60	203	5	89.0		U-235
0	210.51	226	5719	2.07	210.62	209		5101.4		
1	236.05	1194	4893	1.71	236.16	232	13	18.3	2.18E+01	
1	241.73	10890	3585	1.41	241.84	232	13	2.5		RA-224
1	256.05	592	4081	1.73	256.16	254	8	33.4	8.01E+00	
1	258.73	663	3098	1.42	258.84	254	8	25.4		
5	266.19	167	1524	1.92	266.30	265	14	58.2	1.90E+01	
5	269.69	1672	5946	2.56	269.80	265	14	16.7		CS-135
5	274.36	605	4346	2.12	274.47	265	14	36.6		
0	294.89*	22758	5551	1.34	295.00	291	8	1.7		PB-214
0	300.86	318	3910	4.93	300.97	299	6	63.4		
0	313.03	177	3374	2.18	313.13	311		6104.6		PA-233
0	324.14	174	2829	1.72	324.25	322	5	92.9		RA-223
0	329.26	174	2859	1.44	329.36	328	5	93.6		
0	337.62	237	2818	1.14	337.72	336	5	68.3		AC-228
0	351.54*	39571	4933	1.77	351.65	347	10	1.2		PB-214
0	368.54	180	2525	3.33	368.65	366	6	89.5		
3	386.40	265	2217	1.69	386.50	384	9	55.2	3.90E+00	
3	388.42	369	3068	2.25	388.53	384	9	51.5		
2	399.25	117	860	2.06	399.36	398	14	62.4	1.68E+01	
2	404.84	374	2553	2.06	404.94	398	14	44.6		PB-211
0	424.92	209	3847	2.56	425.02	422		9108.3		

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It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	454.72	283	2115	1.97	454.83	452	7	55.1		
0	461.87	175	2385	2.41	461.97	459	8	97.9		
0	480.12	426	1770	1.54	480.23	477	7	34.2		
0	486.32	343	1714	2.03	486.42	484	7	41.5		
0	510.17*	386	1811	2.97	510.27	507	8	39.9		
0	533.67	154	1804	1.60	533.77	530	8	96.6		
0	572.70	155	1519	3.98	572.80	569	8	88.9		
0	580.66	455	1851	4.21	580.77	577	10	36.5		
2	604.90	57	395	1.84	605.00	604	11	84.9	1.98E+00	
2	608.78*	29455	921	1.63	608.88	604	11	1.2		BI-214
1	664.99	865	707	1.81	665.09	660	13	11.3	3.13E+00	
1	669.71	73	756	2.07	669.81	660	13	123.6		
0	703.13	239	1178	1.91	703.23	699	8	51.5		
0	719.68	215	1131	2.30	719.78	716	8	55.9		
0	741.67	107	1001	1.30	741.77	739	7	99.4		
0	759.54	70	585	2.83	759.64	758		5106.4		
0	767.64*	2845	1290	1.77	767.74	763	10	6.0		
0	785.15	635	1127	2.09	785.25	781	9	20.6		
0	805.98	832	1182	2.11	806.07	802	10	17.0		
0	820.97	110	951	2.09	821.06	818	7	94.5		
3	831.07	72	704	1.68	831.17	829	14	111.0	1.43E+00	PB-211
3	838.39	412	927	2.29	838.48	829	14	26.5		
0	910.75*	311	1151	5.01	910.84	906	10	42.5		AC-228
0	933.30*	1383	1201	2.09	933.39	929	10	10.8		
0	963.35	117	834	2.46	963.44	961	7	84.0		
0	968.98*	91	632	2.57	969.07	967	6	90.1		AC-228
0	1000.42*	253	838	2.05	1000.51	997	8	41.8		PA-234M
0	1051.13	147	653	2.33	1051.22	1048	8	62.8		
0	1103.12	120	752	4.24	1103.21	1099	9	84.8		
0	1119.49*	6262	1126	2.19	1119.58	1114	12	3.3		BI-214
0	1154.57	719	895	2.12	1154.65	1150	11	17.8		
0	1172.78*	87	491	1.64	1172.87	1170	7	87.2		
0	1181.68	116	673	3.82	1181.77	1177	9	82.5		
0	1207.45	107	646	1.84	1207.54	1203	8	84.4		
0	1237.31*	2212	634	2.23	1237.40	1233	9	5.9		
0	1253.41	83	646	2.97	1253.49	1249		9113.3		
0	1280.45	582	753	2.25	1280.53	1275	12	20.7		
0	1289.67	50	329	1.68	1289.76	1288		6117.3		
0	1302.14	79	370	3.98	1302.22	1299	7	83.4		
2	1376.76*	1705	343	2.37	1376.84	1373	18	6.1	2.12E+00	
2	1384.34	339	436	2.70	1384.42	1373	18	23.5		
5	1400.55	512	378	2.35	1400.63	1397	16	15.4	7.83E-01	
5	1407.08*	845	396	2.34	1407.16	1397	16	10.4		
0	1416.79	69	444	2.80	1416.87	1413		8108.3		
0	1424.67	57	382	3.33	1424.75	1422		7117.7		
0	1459.86*	651	750	2.37	1459.94	1455	11	18.1		K-40
0	1495.83	83	644	5.23	1495.90	1491		11119.9		
0	1508.04	709	734	2.40	1508.12	1503	11	16.6		
0	1537.29	129	386	2.35	1537.37	1535	6	51.1		
0	1542.51	112	362	2.15	1542.59	1540	6	57.2		
0	1582.57	278	482	3.08	1582.65	1578	12	33.8		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
2	1593.30	113	239	2.81	1593.38	1590	13	47.0	9.61E-01	
2	1598.32	124	284	2.27	1598.39	1590	13	49.0		
0	1629.27	86	292	8.30	1629.34	1624	12	82.4		
0	1659.91	368	328	2.36	1659.98	1653	13	22.8		
0	1682.21	46	160	1.69	1682.29	1679	7	97.1		
0	1692.99	96	241	2.84	1693.07	1687	11	66.0		
0	1728.38	1096	196	2.51	1728.45	1723	12	7.9		
0	1763.33*	5091	220	2.59	1763.40	1759	11	3.0		BI-214
0	1826.95	36	100	2.19	1827.02	1823		9107.1		
4	1837.01	131	123	3.53	1837.08	1832	20	39.6	1.44E+00	
4	1846.15	748	110	2.81	1846.22	1832	20	8.7		
0	1871.11	92	123	1.92	1871.18	1866	10	50.2		
3	1889.20	80	120	3.23	1889.27	1884	19	55.4	1.75E+00	
3	1894.08	44	68	2.17	1894.15	1884	19	71.0		
3	1897.18	50	88	2.68	1897.24	1884	19	76.5		
0	1934.80	83	116	4.18	1934.86	1930	10	52.8		
0	2014.22	84	194	17.36	2014.28	2003	21	85.9		
0	2027.05	23	59	3.66	2027.12	2025		6114.9		
0	2117.43	360	90	2.87	2117.49	2110	13	15.1		
0	2147.80	32	33	4.72	2147.86	2141	12	80.1		
0	2202.62*	1401	46	2.85	2202.68	2196	13	5.7		
0	2291.83	81	15	3.69	2291.89	2287	10	28.5		
0	2307.12	9	5	1.20	2307.18	2302		7106.2		
0	2365.45	16	16	6.39	2365.51	2359	15	121.0		
0	2445.93	402	6	2.24	2445.98	2440	12	10.3		
0	2612.95*	65	3	2.26	2613.00	2607	13	28.9		
0	2919.53	7	2	2.62	2919.57	2915		8100.6		
0	2975.36	5	0	1.24	2975.40	2971	7	89.4		

Total number of lines in spectrum 114
Number of unidentified lines 66
Number of lines tentatively identified by NID 48 42.11%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
K-40	1.28E+09Y	1.00	1.929E+01	1.929E+01	0.396E+01	20.53	
PB-210	22.26Y	1.00	3.895E+01	3.905E+01	0.663E+01	16.97	
PB-211	3.28E+04Y	1.00	9.219E+00	9.219E+00	4.405E+00	47.78	
BI-214	1602.00Y	1.00	1.079E+02	1.079E+02	0.067E+02	6.17	
PB-214	1602.00Y	1.00	1.094E+02	1.094E+02	0.125E+02	11.40	
RA-223	3.28E+04Y	1.00	4.369E+00	4.369E+00	4.122E+00	94.35	
RA-224	1.41E+10Y	1.00	2.201E+02	2.201E+02	0.345E+02	15.67	
RA-226	1602.00Y	1.00	2.012E+02	2.012E+02	3.689E+02	183.30	
AC-228	1.41E+10Y	1.00	1.973E+00	1.973E+00	0.700E+00	35.48	
PA-233	27.00D	2.13	4.356E-01	9.292E-01	10.04E-01	108.03	
PA-234M	4.47E+09Y	1.00	6.596E+01	6.596E+01	2.835E+01	42.99	
TH-234	4.47E+09Y	1.00	6.130E+01	6.130E+01	0.837E+01	13.66	
U-235	7.04E+08Y	1.00	5.604E+00	5.604E+00	1.957E+00	34.93	
Total Activity :			8.457E+02	8.463E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
CD-109	464.00D	1.05	2.685E+01	2.806E+01	0.743E+01	26.48	
SN-126	1.00E+05Y	1.00	2.700E+00	2.700E+00	0.697E+00	25.80	
Total Activity :			2.955E+01	3.076E+01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
CS-135	2.30E+06Y	1.00	8.929E+00	8.929E+00	2.213E+00	24.78	
AM-243	7380.00Y	1.00	1.244E+01	1.244E+01	0.123E+01	9.89	
Total Activity :			2.137E+01	2.137E+01			

Grand Total Activity : 8.966E+02 8.984E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma %Error	Status
				pCi/gram	pCi/gram		
K-40	1460.81	10.67*	4.705E-01	1.929E+01	1.929E+01	20.53	OK
Final Mean for 1 Valid Peaks = 1.929E+01+/- 3.960E+00 (20.53%)							
PB-210	46.50	4.25*	1.969E+00	3.895E+01	3.905E+01	16.97	OK
Final Mean for 1 Valid Peaks = 3.905E+01+/- 6.628E+00 (16.97%)							
PB-211	404.84	2.90*	1.290E+00	1.488E+01	1.488E+01	45.86	OK
	831.96	2.90	7.168E-01	5.175E+00	5.175E+00	111.43	OK
Final Mean for 2 Valid Peaks = 9.219E+00+/- 4.405E+00 (47.78%)							
BI-214	609.31	46.30*	9.260E-01	1.022E+02	1.022E+02	10.43	OK
	1120.29	15.10	5.678E-01	1.086E+02	1.086E+02	11.26	OK
	1764.49	15.80	4.183E-01	1.145E+02	1.145E+02	10.41	OK
	2204.22	4.98	3.725E-01	-----	Line Not Found	-----	Absent
Final Mean for 3 Valid Peaks = 1.079E+02+/- 6.663E+00 (6.17%)							
PB-214	295.21	19.19	1.631E+00	1.081E+02	1.081E+02	18.66	OK
	351.92	37.19*	1.436E+00	1.101E+02	1.102E+02	14.39	OK
Final Mean for 2 Valid Peaks = 1.094E+02+/- 1.246E+01 (11.40%)							
RA-223	323.87	3.88*	1.527E+00	4.369E+00	4.369E+00	94.35	OK
Final Mean for 1 Valid Peaks = 4.369E+00+/- 4.122E+00 (94.35%)							
RA-224	240.98	3.95*	1.863E+00	2.201E+02	2.201E+02	15.67	OK
Final Mean for 1 Valid Peaks = 2.201E+02+/- 3.448E+01 (15.67%)							
RA-226	186.21	3.28*	2.147E+00	2.012E+02	2.012E+02	183.30	OK
Final Mean for 1 Valid Peaks = 2.012E+02+/- 3.689E+02 (183.30%)							
AC-228	338.32	11.40	1.479E+00	2.094E+00	2.094E+00	70.04	OK
	911.07	27.70*	6.664E-01	2.508E+00	2.508E+00	43.52	OK
	969.11	16.60	6.347E-01	1.287E+00	1.287E+00	90.63	OK
Final Mean for 3 Valid Peaks = 1.973E+00+/- 7.002E-01 (35.48%)							
PA-233	311.98	38.60*	1.569E+00	4.356E-01	9.292E-01	108.03	OK
Final Mean for 1 Valid Peaks = 9.292E-01+/- 1.004E+00 (108.03%)							
PA-234M	1001.03	0.92*	6.188E-01	6.596E+01	6.596E+01	42.99	OK
Final Mean for 1 Valid Peaks = 6.596E+01+/- 2.835E+01 (42.99%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.351E+00	6.130E+01	6.130E+01	13.66	OK

Final Mean for 1 Valid Peaks = 6.130E+01+/- 8.375E+00 (13.66%)

U-235	143.76	10.50*	2.382E+00	6.146E+00	6.146E+00	37.25	OK
	163.35	4.70	2.275E+00	-----	Line Not Found	-----	Absent
	205.31	4.70	2.043E+00	4.130E+00	4.130E+00	91.42	OK

Final Mean for 2 Valid Peaks = 5.604E+00+/- 1.957E+00 (34.93%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CD-109	88.03	3.72*	2.541E+00	2.685E+01	2.806E+01	26.48	OK

Final Mean for 1 Valid Peaks = 2.806E+01+/- 7.430E+00 (26.48%)

SN-126	87.57	37.00*	2.540E+00	2.700E+00	2.700E+00	25.80	OK
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Final Mean for 1 Valid Peaks = 2.700E+00+/- 6.966E-01 (25.80%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CS-135	268.24	16.00*	1.740E+00	8.929E+00	8.929E+00	24.78	OK

Final Mean for 1 Valid Peaks = 8.929E+00+/- 2.213E+00 (24.78%)

AM-243	74.67	66.00*	2.478E+00	1.244E+01	1.244E+01	9.89	OK
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Final Mean for 1 Valid Peaks = 1.244E+01+/- 1.230E+00 (9.89%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	1.929E+01	3.960E+00	3.064E+00	2.706E-01	6.294
CD-109	2.806E+01	7.430E+00	8.728E+00	9.970E-01	3.215
SN-126	2.700E+00	6.966E-01	8.397E-01	8.170E-02	3.216
CS-135	8.929E+00	2.213E+00	1.492E+00	2.663E-01	5.986
PB-210	3.905E+01	6.628E+00	7.493E+00	6.514E-01	5.212
PB-211	9.219E+00	4.405E+00	9.006E+00	8.833E-01	1.024
BI-214	1.079E+02	6.663E+00	5.281E-01	5.045E-02	204.408
PB-214	1.094E+02	1.246E+01	6.547E-01	9.015E-02	167.079
RA-223	4.369E+00	4.122E+00	6.288E+00	1.014E+00	0.695
RA-224	2.201E+02	3.448E+01	6.287E+00	9.397E-01	35.005
RA-226	2.012E+02	3.689E+02	7.970E+00	1.460E+01	25.249
AC-228	1.973E+00	7.002E-01	1.082E+00	9.223E-02	1.824
PA-233	9.292E-01	1.004E+00	1.286E+00	3.448E-01	0.723
PA-234M	6.596E+01	2.835E+01	3.181E+01	2.919E+00	2.073
TH-234	6.130E+01	8.375E+00	8.308E+00	6.406E-01	7.378
U-235	5.604E+00	1.957E+00	2.473E+00	4.559E-01	2.266
AM-243	1.244E+01	1.230E+00	4.718E-01	4.039E-02	26.361

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	2.664E+00		2.249E+00	3.544E+00	3.541E-01	0.752
NA-22	4.442E-03		2.113E-01	3.105E-01	2.821E-02	0.014
AL-26	-4.615E-02		1.052E-01	1.821E-01	1.671E-02	-0.253
TI-44	6.794E-01	+	2.201E-01	3.542E-01	2.845E-02	1.918
SC-46	8.003E-02		2.339E-01	3.948E-01	3.348E-02	0.203
V-48	4.231E-01		6.381E-01	1.082E+00	9.791E-02	0.391
CR-51	-1.245E+00		4.073E+00	5.106E+00	8.508E-01	-0.244
MN-54	1.789E-01		1.884E-01	3.222E-01	2.824E-02	0.555
CO-56	-1.081E-01		2.416E-01	3.578E-01	3.117E-02	-0.302
CO-57	3.817E-02		1.855E-01	3.024E-01	3.699E-02	0.126
CO-58	1.928E-01		2.361E-01	3.649E-01	3.243E-02	0.528
FE-59	6.303E-02		5.711E-01	8.494E-01	8.895E-02	0.074
CO-60	2.388E-01	+	2.099E-01	3.054E-01	3.158E-02	0.782
ZN-65	6.846E+00		9.429E-01	1.126E+00	1.123E-01	6.078
SE-75	4.755E-01		3.793E-01	4.849E-01	8.477E-02	0.981
RB-82	-3.129E-01		3.636E+00	4.342E+00	3.899E-01	-0.072
RB-83	3.051E-01		3.811E-01	6.579E-01	1.080E-01	0.464
KR-85	1.620E+01		3.548E+01	5.536E+01	5.520E+00	0.293
SR-85	9.659E-02		2.116E-01	3.301E-01	3.291E-02	0.293
Y-88	5.817E-01	+	2.376E-01	3.158E-01	2.906E-02	1.842
NB-93M	-2.999E+00		7.958E+00	1.329E+01	5.248E+00	-0.226
NB-94	-4.826E-02		1.766E-01	2.943E-01	2.527E-02	-0.164
NB-95	8.664E+00		9.703E-01	9.329E-01	8.407E-02	9.287
ZR-95	-3.131E-01		4.254E-01	6.274E-01	6.190E-02	-0.499
RU-103	-5.819E-02		2.564E-01	4.389E-01	6.599E-02	-0.133
RU-106	-1.819E-01		1.428E+00	2.431E+00	3.383E-01	-0.075

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
AG-108M	1.397E-01		1.836E-01	2.848E-01	2.587E-02	0.490
AG-110M	6.039E-02		1.755E-01	2.711E-01	2.478E-02	0.223
SN-113	-1.246E-01		2.984E-01	4.621E-01	4.612E-02	-0.270
TE123M	1.247E-02		2.496E-01	3.718E-01	3.355E-02	0.034
SB-124	6.888E-02		2.356E-01	3.637E-01	3.492E-02	0.189
I-125	-3.916E+00		4.235E+00	7.005E+00	7.821E-01	-0.559
SB-125	1.819E+00		6.073E-01	9.449E-01	9.491E-02	1.925
SB-126	3.838E+00	+	2.178E+00	2.690E+00	2.444E-01	1.427
SB-127	4.921E+01		7.912E+01	1.363E+02	1.241E+01	0.361
I-129	-3.031E-02		4.388E-01	6.852E-01	9.480E-02	-0.044
I-131	-8.218E-01		2.329E+00	3.625E+00	4.562E-01	-0.227
BA-133	7.362E-02		2.679E-01	3.881E-01	6.487E-02	0.190
CS-134	9.649E-02	+	8.258E-02	3.576E-01	3.435E-02	0.270
CS-136	5.159E-01		1.156E+00	1.747E+00	1.701E-01	0.295
CS-137	4.900E-01		1.962E-01	3.120E-01	2.845E-02	1.570
LA-138	-9.962E-02		2.755E-01	4.455E-01	3.799E-02	-0.224
CE-139	-2.331E-01		2.356E-01	3.747E-01	3.144E-02	-0.622
BA-140	-3.015E-01		3.098E+00	4.762E+00	1.595E+00	-0.063
LA-140	2.945E+00		1.118E+00	1.781E+00	1.579E-01	1.654
CE-141	1.306E+00		7.637E-01	1.050E+00	2.609E-01	1.245
CE-144	-1.369E+00		1.534E+00	2.456E+00	2.764E-01	-0.557
PM-144	-6.811E-02		1.776E-01	2.671E-01	2.434E-02	-0.255
PM-145	-8.879E-01		1.045E+00	1.443E+00	9.437E-01	-0.615
PM-146	9.049E-01	+	5.084E-01	6.454E-01	6.431E-02	1.402
ND-147	1.034E+01		7.594E+00	1.198E+01	1.190E+00	0.863
EU-152	1.752E+01	+	2.714E+00	3.435E+00	3.705E-01	5.100
GD-153	-6.450E-01		7.008E-01	1.131E+00	1.215E-01	-0.570
EU-154	-9.730E-03		5.852E-01	8.587E-01	7.803E-02	-0.011
EU-155	1.136E+00		7.562E-01	1.145E+00	1.102E-01	0.992
EU-156	7.736E+00		7.241E+00	1.010E+01	2.317E+00	0.766
HO-166M	1.357E-01		3.248E-01	4.588E-01	4.173E-02	0.296
HF-172	-1.409E+00		1.362E+00	2.177E+00	2.592E-01	-0.647
LU-172	-3.746E+00		6.891E+00	9.974E+00	9.791E-01	-0.376
LU-173	4.788E+00		1.202E+00	1.359E+00	2.486E-01	3.523
HF-175	8.416E-02		3.195E-01	4.047E-01	5.879E-02	0.208
LU-176	1.014E-01		1.970E-01	2.519E-01	4.377E-02	0.403
TA-182	5.292E+01		5.896E+00	3.379E+00	3.379E-01	15.664
IR-192	2.382E-01		4.304E-01	6.740E-01	6.730E-02	0.353
HG-203	-3.535E-01		3.443E-01	4.825E-01	9.269E-02	-0.733
BI-207	7.505E-02		1.611E-01	2.506E-01	2.454E-02	0.299
TL-208	5.848E-01		5.390E-01	8.474E-01	8.237E-02	0.690
BI-210M	-4.109E-02		4.157E-01	5.300E-01	9.097E-02	-0.078
BI-212	8.871E-01		1.400E+00	2.166E+00	1.966E-01	0.410
PB-212	4.036E+00		7.269E-01	6.817E-01	1.003E-01	5.919
RN-219	5.590E+00		2.464E+00	4.253E+00	4.166E-01	1.314
RA-225	2.290E-01		2.474E+00	3.846E+00	3.800E-01	0.060
TH-227	8.183E+00	+	1.934E+00	2.430E+00	3.510E-01	3.368
TH-230	1.734E+02	+	5.616E+01	9.027E+01	7.235E+00	1.921

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
PA-231	1.290E+01		7.599E+00	1.082E+01	1.911E+00	1.192
TH-231	2.503E+00		2.166E+00	3.369E+00	5.793E-01	0.743
PA-234	1.002E+00		7.476E-01	1.212E+00	1.388E-01	0.827
NP-237	2.759E+00		1.834E+00	2.777E+00	2.673E-01	0.993
AM-241	1.376E+00		6.543E-01	8.927E-01	6.673E-02	1.542
CM-243	2.413E-01		1.193E+00	1.743E+00	3.297E-01	0.138

Total number of lines in spectrum 114
Number of unidentified lines 66
Number of lines tentatively identified by NID 48 42.11%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
K-40	1.28E+09Y	1.00	1.929E+01	1.929E+01	0.396E+01	20.53	
PB-210	22.26Y	1.00	3.895E+01	3.905E+01	0.663E+01	16.97	
PB-211	3.28E+04Y	1.00	9.219E+00	9.219E+00	4.405E+00	47.78	
BI-214	1602.00Y	1.00	1.079E+02	1.079E+02	0.067E+02	6.17	
PB-214	1602.00Y	1.00	1.094E+02	1.094E+02	0.125E+02	11.40	
RA-223	3.28E+04Y	1.00	4.369E+00	4.369E+00	4.122E+00	94.35	
RA-224	1.41E+10Y	1.00	2.201E+02	2.201E+02	0.345E+02	15.67	
RA-226	1602.00Y	1.00	2.012E+02	2.012E+02	3.689E+02	183.30	
AC-228	1.41E+10Y	1.00	1.973E+00	1.973E+00	0.700E+00	35.48	
PA-233	27.00D	2.13	4.356E-01	9.292E-01	10.04E-01	108.03	
PA-234M	4.47E+09Y	1.00	6.596E+01	6.596E+01	2.835E+01	42.99	
TH-234	4.47E+09Y	1.00	6.130E+01	6.130E+01	0.837E+01	13.66	
U-235	7.04E+08Y	1.00	5.604E+00	5.604E+00	1.957E+00	34.93	
Total Activity :			8.457E+02	8.463E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
CD-109	464.00D	1.05	2.685E+01	2.806E+01	0.743E+01	26.48	
SN-126	1.00E+05Y	1.00	2.700E+00	2.700E+00	0.697E+00	25.80	
Total Activity :			2.955E+01	3.076E+01			

Nuclide Type : ACTIVATION

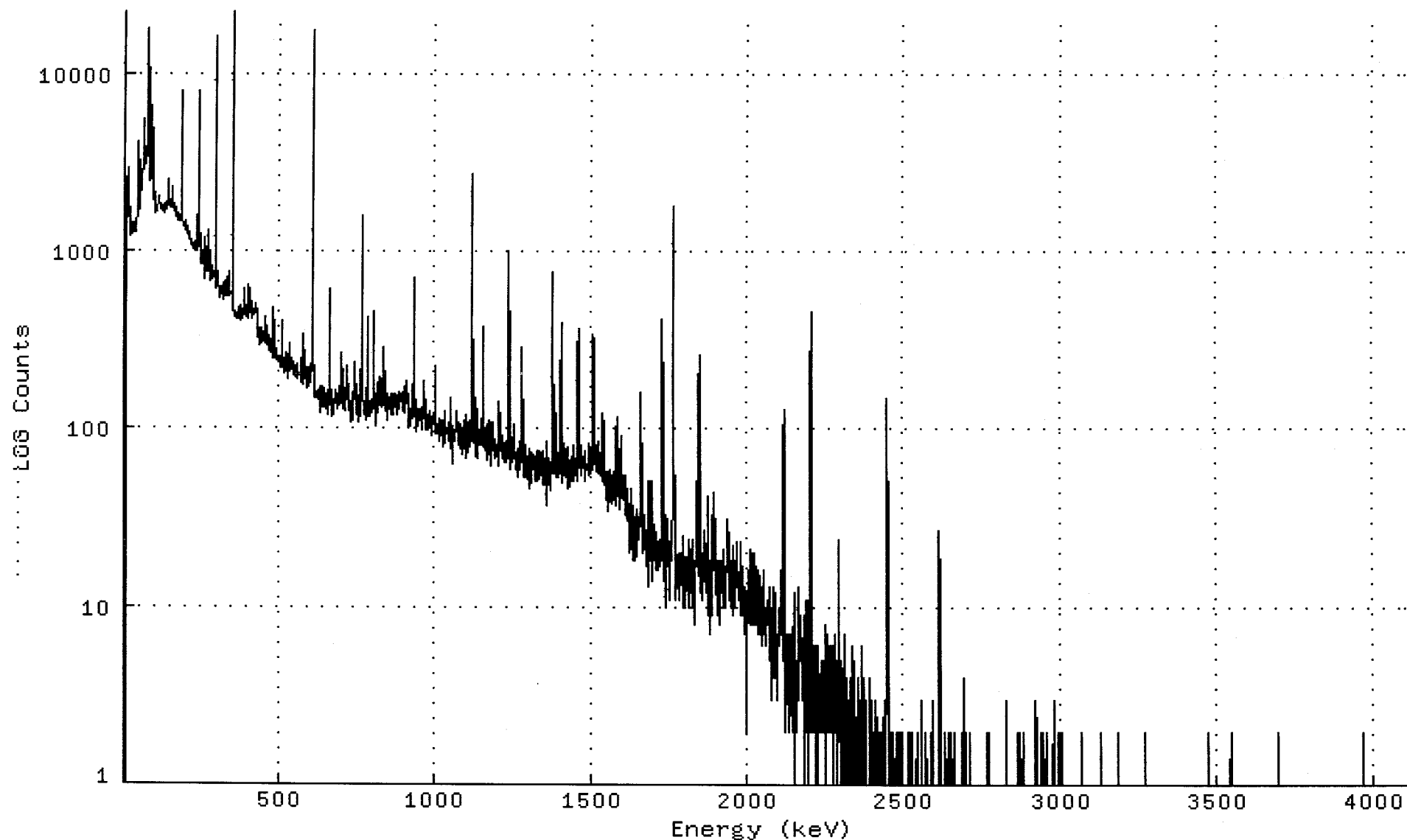
Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
CS-135	2.30E+06Y	1.00	8.929E+00	8.929E+00	2.213E+00	24.78	
AM-243	7380.00Y	1.00	1.244E+01	1.244E+01	0.123E+01	9.89	
Total Activity :			2.137E+01	2.137E+01			

Grand Total Activity : 8.966E+02 8.984E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301304_GE2_GAS1202_190117.CNF;1
Title :
Sample Title: MQZ-35-130303
Start Time: 1-APR-2013 11:36: Sample Time: 3-MAR-2013 00:00: Energy Offset: -1.16012E-01
Real Time : 0 01:00:19.49 Sample ID : 1303013-04 Energy Slope : 1.00003E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel

1:	0	0	0	0	0	685	2080	2528
9:	2526	2583	1953	2887	2342	1545	1655	1873
17:	1605	1523	1438	1381	1213	1262	1238	1337
25:	1309	1317	1416	1335	1270	1253	1254	1413
33:	1288	1310	1266	1322	1429	1298	1359	1468
41:	1514	1520	1569	1678	1729	3766	4090	1695
49:	1857	2307	2020	2084	3183	2465	2148	2149
57:	2278	2599	2588	2949	3021	3167	5498	4115
65:	3048	3048	3465	3747	3081	3210	3343	3323
73:	3669	6463	11155	6001	17594	6362	3602	3103
81:	3645	2440	3083	4541	2504	2833	6417	4253
89:	2856	3865	2403	4075	4828	2545	2431	1885
97:	1814	2099	1792	1746	1617	1684	1692	1655
105:	1785	1753	1706	1700	1844	1819	1829	1910
113:	1984	1797	1806	1801	1670	1676	1734	1704
121:	1758	1760	1697	1646	1656	1755	1626	1684
129:	1760	1719	1771	1797	1714	1700	1683	1755
137:	1789	1844	1816	1788	1798	1813	1970	2481
145:	1868	1711	1775	1870	1878	1824	1886	1916
153:	1897	2247	1974	1821	1745	1671	1765	1683
161:	1729	1634	1833	1684	1620	1587	1580	1519
169:	1597	1553	1599	1519	1451	1483	1501	1482
177:	1511	1461	1489	1465	1531	1571	1558	1513
185:	3164	7747	2966	1482	1396	1413	1345	1405
193:	1438	1401	1468	1462	1416	1388	1371	1289
201:	1343	1273	1334	1262	1363	1255	1141	1182
209:	1179	1225	1261	1184	1096	1144	1100	1051
217:	1130	1117	1072	1055	1079	1030	1070	1018
225:	1050	1115	1050	1059	995	1002	1005	1031
233:	989	1000	1188	1575	1068	1233	1138	1027
241:	3569	7842	1806	824	870	876	861	856
249:	903	850	828	828	882	843	882	1108
257:	917	1026	1164	780	692	787	803	778
265:	757	861	763	832	1307	1129	1244	835
273:	765	968	985	796	714	703	711	676
281:	743	721	772	771	690	805	701	705
289:	709	700	720	720	723	4381	15815	4715
297:	651	601	756	759	627	739	692	655
305:	612	622	582	592	548	533	581	586
313:	626	603	583	572	560	603	528	586
321:	603	522	653	668	568	592	544	563
329:	627	701	579	563	605	634	546	575
337:	590	756	583	551	580	563	565	576
345:	565	562	564	581	624	1304	15014	22352
353:	2751	460	436	449	419	458	446	455
361:	433	433	438	413	407	430	443	465
369:	473	461	433	412	433	406	437	406
377:	421	489	431	416	461	417	466	435
385:	444	574	588	567	612	428	426	433
393:	425	467	477	488	431	431	474	411
401:	575	633	457	506	608	496	443	468
409:	460	517	414	428	475	420	463	469
417:	455	456	464	455	432	449	468	446
425:	471	479	503	431	397	412	423	355

433:	322	342	343	336	292	352	360	327
441:	367	333	311	353	361	302	350	346
449:	335	309	306	312	325	391	420	321
457:	329	300	294	292	351	376	342	315
465:	316	274	324	294	328	322	314	272
473:	291	298	273	280	249	282	319	478
481:	342	282	244	244	297	352	406	271
489:	245	242	249	267	278	255	267	234
497:	237	243	252	245	246	219	239	233
505:	250	236	227	234	326	402	372	305
513:	225	201	244	247	224	226	234	240
521:	237	237	264	210	232	190	209	225
529:	221	210	242	224	296	270	207	264
537:	245	222	211	213	227	228	246	225
545:	202	222	234	205	200	198	213	212
553:	225	191	207	211	190	222	199	229
561:	224	210	204	199	204	205	203	200
569:	214	193	210	247	232	179	225	174
577:	180	195	273	339	200	262	271	202
585:	195	189	194	220	210	165	189	187
593:	211	195	197	198	217	199	172	182
601:	209	203	210	186	227	208	603	7823
609:	16965	4798	296	167	147	155	177	156
617:	165	148	155	146	147	160	156	151
625:	151	145	163	147	144	162	146	157
633:	158	171	162	121	163	158	160	170
641:	165	130	148	136	130	160	137	166
649:	145	138	128	129	145	129	149	119
657:	149	146	159	150	176	147	149	308
665:	604	326	135	139	133	162	125	115
673:	129	131	125	145	144	141	119	156
681:	137	162	148	148	152	144	135	130
689:	131	127	141	173	150	151	134	172
697:	141	173	146	155	138	237	267	175
705:	170	129	146	139	137	163	153	141
713:	128	132	166	124	163	178	221	205
721:	148	156	151	126	141	176	160	132
729:	135	128	132	122	140	107	117	123
737:	132	149	110	147	174	237	149	145
745:	146	161	142	132	164	120	145	177
753:	142	130	144	138	108	120	151	125
761:	142	117	121	117	174	266	904	1572
769:	532	173	144	135	141	130	138	119
777:	139	127	109	128	116	125	137	203
785:	417	361	169	115	119	137	124	141
793:	115	137	124	134	126	145	136	140
801:	123	122	127	161	379	449	221	138
809:	143	146	128	102	147	154	135	121
817:	133	129	131	166	191	164	146	134
825:	145	165	152	148	140	132	190	163
833:	139	142	135	152	171	281	285	152
841:	135	129	126	142	133	124	154	110
849:	114	118	130	137	146	140	136	128
857:	132	145	134	154	120	136	148	142
865:	153	155	127	140	118	140	144	156
873:	137	135	134	149	136	141	138	131
881:	150	119	131	154	140	141	134	160
889:	149	141	153	150	155	150	127	126
897:	147	158	156	145	156	138	171	148
905:	123	131	146	136	150	178	186	137

913:	136	154	111	100	127	125	122	103
921:	115	112	114	125	131	126	126	113
929:	120	119	132	242	696	703	206	138
937:	129	101	145	119	96	142	107	116
945:	102	129	114	119	112	124	126	109
953:	129	118	117	103	108	130	103	130
961:	98	132	184	159	153	113	112	134
969:	144	126	114	97	104	123	112	108
977:	113	118	97	108	109	110	126	122
985:	125	106	90	117	107	98	111	102
993:	120	122	105	114	112	110	123	221
1001:	200	129	106	92	105	93	97	99
1009:	97	100	103	84	112	96	96	98
1017:	95	111	105	91	108	99	107	79
1025:	110	106	82	90	100	113	101	124
1033:	88	83	105	94	96	92	99	95
1041:	98	97	85	94	107	87	95	77
1049:	106	85	146	137	111	67	71	86
1057:	97	75	63	103	84	91	85	98
1065:	89	96	95	117	125	108	99	95
1073:	102	81	89	108	98	91	99	84
1081:	96	76	105	86	98	81	71	92
1089:	94	101	77	96	94	93	87	110
1097:	68	106	81	97	103	119	112	103
1105:	104	81	72	80	90	97	102	79
1113:	90	110	97	84	128	610	2473	2676
1121:	820	121	89	91	93	84	82	88
1129:	98	97	69	100	147	110	67	80
1137:	77	80	76	97	84	93	84	85
1145:	93	80	85	81	93	85	92	92
1153:	142	373	356	138	82	78	99	77
1161:	74	81	75	81	105	87	83	67
1169:	72	66	90	111	80	72	85	81
1177:	61	84	72	99	108	96	107	80
1185:	82	74	84	87	74	73	67	70
1193:	80	75	87	77	70	75	71	76
1201:	75	84	78	61	89	111	142	106
1209:	88	78	83	74	81	78	91	68
1217:	87	91	71	64	82	77	74	71
1225:	69	65	73	72	85	81	68	84
1233:	68	68	104	389	990	817	259	95
1241:	59	72	72	72	69	67	76	88
1249:	64	70	84	95	106	100	78	68
1257:	64	73	59	63	69	67	53	77
1265:	69	61	70	72	78	62	58	69
1273:	75	85	64	85	66	88	166	288
1281:	215	100	59	73	77	54	53	53
1289:	80	71	57	64	54	58	69	66
1297:	52	55	54	58	76	68	73	74
1305:	46	57	49	57	72	64	60	58
1313:	62	59	63	71	65	58	69	60
1321:	68	65	51	58	51	75	57	73
1329:	63	71	66	52	65	65	56	74
1337:	56	65	73	69	54	59	58	74
1345:	70	53	51	48	68	63	66	55
1353:	56	62	37	51	50	84	54	59
1361:	68	60	66	51	48	59	53	54
1369:	59	57	65	46	45	67	167	520
1377:	751	379	112	72	60	56	79	176
1385:	158	93	70	54	69	60	53	56

1393:	72	62	72	53	53	64	94	232
1401:	239	138	61	49	100	221	388	306
1409:	120	59	57	57	59	55	61	82
1417:	73	70	60	53	54	55	56	79
1425:	63	74	65	46	63	63	66	54
1433:	54	47	54	53	69	70	51	62
1441:	51	56	60	58	69	80	58	60
1449:	57	62	62	57	50	70	62	61
1457:	56	98	259	364	232	83	62	76
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1473:	69	63	61	62	67	63	50	74
1481:	57	70	65	61	59	60	60	62
1489:	63	55	54	58	56	69	83	76
1497:	75	58	77	65	56	68	59	64
1505:	70	100	192	342	308	114	65	66
1513:	63	76	57	66	73	81	60	57
1521:	71	85	63	69	56	64	72	54
1529:	57	68	70	64	62	61	50	84
1537:	114	123	79	65	77	105	110	69
1545:	48	57	45	57	54	40	48	55
1553:	49	34	57	48	50	39	59	59
1561:	42	40	50	38	38	48	53	44
1569:	54	41	43	42	40	48	57	37
1577:	42	40	47	57	90	117	106	70
1585:	49	55	42	43	44	35	46	49
1593:	77	67	65	41	57	91	77	59
1601:	41	41	41	43	40	54	54	36
1609:	44	33	40	38	46	30	34	41
1617:	34	37	34	35	38	23	26	20
1625:	21	39	28	43	33	46	40	23
1633:	30	37	18	33	31	23	32	25
1641:	28	18	28	25	31	35	19	22
1649:	23	27	31	26	25	32	24	33
1657:	35	42	86	160	126	55	24	28
1665:	26	24	20	21	33	22	26	29
1673:	23	22	23	27	17	26	25	21
1681:	29	50	36	32	13	29	24	18
1689:	25	31	45	50	50	21	24	27
1697:	22	14	29	21	24	20	18	22
1705:	19	25	23	24	26	16	23	16
1713:	20	22	19	22	18	24	24	20
1721:	23	17	20	21	18	42	182	407
1729:	360	151	41	16	20	14	15	22
1737:	16	33	10	18	26	25	20	20
1745:	31	17	27	17	23	23	11	19
1753:	17	19	22	23	26	23	20	47
1761:	154	843	1781	1650	625	137	22	13
1769:	25	13	11	24	16	13	19	16
1777:	19	19	13	13	11	20	18	16
1785:	17	20	14	16	20	14	12	14
1793:	13	12	25	10	13	14	19	17
1801:	18	10	15	19	13	17	15	14
1809:	17	16	13	10	12	24	15	18
1817:	21	17	17	12	15	13	11	10
1825:	24	21	17	14	11	15	13	8
1833:	18	17	25	39	50	46	18	20
1841:	18	15	26	44	162	261	221	99
1849:	30	12	15	17	20	13	11	14
1857:	13	19	14	17	18	20	27	19
1865:	17	12	21	21	21	16	32	42

1873:	19	21	10	11	7	16	18	15
1881:	18	17	9	16	15	12	19	25
1889:	44	21	22	16	17	33	28	22
1897:	31	20	18	20	15	9	12	18
1905:	17	16	14	17	14	12	18	8
1913:	12	13	18	17	15	16	14	10
1921:	20	19	15	19	21	11	14	17
1929:	11	10	13	18	19	31	25	30
1937:	25	17	11	14	26	17	18	26
1945:	13	15	12	10	13	18	14	14
1953:	9	22	18	14	16	17	14	18
1961:	10	16	16	13	23	15	20	17
1969:	15	15	11	13	15	14	15	23
1977:	9	14	15	16	12	14	11	17
1985:	10	17	9	11	12	7	12	10
1993:	13	12	2	11	10	10	7	9
2001:	14	10	9	9	16	16	9	8
2009:	19	21	14	9	8	17	20	17
2017:	10	8	10	20	11	17	10	8
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2033:	12	15	8	7	10	13	15	10
2041:	8	7	9	6	8	13	6	11
2049:	8	8	14	16	10	8	6	8
2057:	10	10	6	9	10	11	8	11
2065:	11	11	7	5	6	10	8	13
2073:	10	10	5	7	3	9	5	13
2081:	5	10	4	7	5	10	7	6
2089:	12	10	4	5	5	7	3	5
2097:	7	6	8	8	10	9	8	8
2105:	7	10	8	16	10	11	7	5
2113:	8	10	22	86	129	112	39	14
2121:	5	2	4	6	6	7	3	5
2129:	7	4	2	4	6	5	6	4
2137:	7	3	5	3	2	5	3	5
2145:	5	5	12	5	9	5	8	1
2153:	5	5	3	5	5	4	2	8
2161:	6	3	13	6	5	6	9	5
2169:	6	5	9	5	5	5	6	5
2177:	3	9	3	4	2	1	5	8
2185:	4	11	2	9	8	5	11	10
2193:	4	1	5	2	4	7	6	41
2201:	181	411	448	246	77	20	4	2
2209:	5	5	6	2	4	3	5	4
2217:	6	6	0	1	4	0	5	5
2225:	1	6	3	2	2	2	4	2
2233:	5	4	5	2	2	4	3	4
2241:	2	5	2	4	1	2	5	3
2249:	0	8	1	7	3	6	2	4
2257:	2	6	3	5	2	6	4	6
2265:	2	2	4	5	2	2	6	4
2273:	0	1	3	7	5	4	3	3
2281:	2	4	5	3	3	3	0	3
2289:	3	15	22	24	18	8	3	0
2297:	3	5	0	4	1	0	0	1
2305:	3	3	7	0	2	4	6	2
2313:	1	1	4	3	0	1	1	2
2321:	2	3	1	2	3	4	3	1
2329:	4	0	6	0	2	1	1	1
2337:	1	1	2	5	1	3	3	2
2345:	1	1	1	1	1	1	4	3

2353:	2	3	1	3	3	0	1	2
2361:	2	4	0	6	2	5	2	4
2369:	1	1	1	1	0	3	1	2
2377:	2	2	3	1	1	1	0	0
2385:	1	1	0	4	0	0	1	0
2393:	3	0	2	2	2	0	1	1
2401:	0	1	1	2	0	1	3	1
2409:	0	3	2	0	0	1	0	1
2417:	1	1	0	2	0	1	0	2
2425:	1	1	1	0	1	0	0	2
2433:	1	1	2	3	2	1	1	0
2441:	1	6	5	43	76	148	84	31
2449:	11	3	0	1	0	1	0	0
2457:	2	1	2	0	0	1	0	1
2465:	2	1	1	1	1	0	1	1
2473:	1	1	1	2	1	2	2	2
2481:	2	1	1	2	1	0	2	0
2489:	0	0	0	1	2	0	0	0
2497:	0	0	0	1	0	0	1	1
2505:	1	0	1	0	1	0	1	2
2513:	0	0	1	2	1	1	1	2
2521:	0	2	0	0	0	0	0	1
2529:	1	0	0	0	0	1	0	1
2537:	1	0	1	2	2	1	0	0
2545:	0	1	1	0	1	1	0	0
2553:	0	1	0	3	1	1	0	0
2561:	0	1	1	0	1	0	1	0
2569:	1	2	1	0	1	0	1	1
2577:	1	0	1	0	0	0	1	0
2585:	1	2	0	0	1	0	0	3
2593:	0	0	0	0	0	0	0	1
2601:	0	0	0	1	0	0	0	1
2609:	0	1	6	17	27	13	5	3
2617:	1	1	1	0	1	1	0	0
2625:	0	0	0	1	2	0	0	0
2633:	0	0	0	1	0	2	2	0
2641:	0	0	0	0	2	0	0	0
2649:	0	1	0	0	0	0	1	1
2657:	2	0	0	1	1	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	1	0	1	0	0	0	1
2681:	1	0	0	0	0	2	0	2
2689:	0	2	2	3	4	1	0	2
2697:	0	0	0	0	0	1	0	0
2705:	0	1	0	2	1	0	0	0
2713:	0	0	1	1	0	1	0	0
2721:	0	1	0	0	0	0	1	0
2729:	0	1	0	1	1	0	1	0
2737:	0	0	0	1	1	0	0	1
2745:	1	0	1	0	0	1	1	0
2753:	0	0	0	0	1	0	0	1
2761:	0	0	0	0	2	1	2	0
2769:	0	1	0	0	0	0	0	0
2777:	0	0	0	0	0	0	1	0
2785:	1	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	0	0	1	0	0	0	0
2809:	0	1	0	1	0	1	0	0
2817:	1	0	0	1	0	0	0	3
2825:	1	0	0	1	0	0	0	0

2833:	0	0	0	0	0	0	0	1
2841:	0	0	0	0	0	0	0	1
2849:	1	0	0	1	1	0	1	0
2857:	0	0	0	0	0	2	0	0
2865:	0	0	0	0	1	0	2	0
2873:	0	0	0	1	1	1	0	2
2881:	1	0	1	0	0	0	0	0
2889:	1	0	0	0	0	0	0	0
2897:	0	0	1	0	1	1	1	0
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	1	0	1	2	3
2921:	2	0	1	0	0	0	1	0
2929:	0	1	1	0	1	0	0	2
2937:	0	0	1	1	2	2	1	1
2945:	1	1	1	0	0	0	2	1
2953:	0	0	0	0	0	0	0	1
2961:	0	0	0	0	0	0	0	0
2969:	0	0	0	0	0	1	1	3
2977:	0	0	0	0	0	0	0	0
2985:	1	0	0	0	0	0	0	2
2993:	0	0	0	1	0	1	1	2
3001:	1	0	2	0	0	1	0	0
3009:	0	0	0	0	0	1	1	0
3017:	0	0	0	0	0	0	0	0
3025:	0	0	1	1	0	0	0	0
3033:	0	1	0	0	0	1	0	0
3041:	0	0	0	0	0	0	1	0
3049:	1	1	0	1	0	0	0	0
3057:	1	0	0	0	0	0	2	0
3065:	0	0	0	0	0	0	0	1
3073:	0	1	0	0	0	0	0	0
3081:	0	1	0	0	0	0	0	0
3089:	0	1	0	0	0	0	0	0
3097:	0	1	0	0	1	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	1	0	0	0	0	0	0	0
3121:	1	0	0	2	0	0	0	0
3129:	1	0	0	0	0	0	0	0
3137:	0	1	0	1	0	0	1	0
3145:	0	0	0	0	1	0	0	0
3153:	0	0	1	0	0	0	0	0
3161:	0	1	0	0	0	0	0	0
3169:	0	0	0	0	0	0	1	0
3177:	1	0	0	0	0	2	0	0
3185:	0	1	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	1	0	0	0	0	1
3209:	0	0	0	0	0	0	0	0
3217:	1	0	0	0	1	0	0	0
3225:	0	0	0	0	0	0	1	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	1	1	0	1	0	1
3257:	0	1	0	0	0	0	0	0
3265:	0	1	0	1	2	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	1	1	0
3289:	0	0	0	0	1	0	0	0
3297:	1	0	0	0	0	0	1	0
3305:	0	1	0	0	0	0	0	1

3313:	0	0	0	0	1	0	0	0
3321:	0	0	1	0	0	0	0	1
3329:	0	0	0	0	0	0	0	0
3337:	1	0	1	0	0	0	0	0
3345:	0	0	0	0	0	0	0	1
3353:	0	0	0	0	0	0	1	0
3361:	0	0	1	1	1	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	1	0	0
3385:	1	0	0	0	0	1	0	0
3393:	0	0	0	0	0	1	0	0
3401:	0	0	0	0	0	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	1	1	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	0	0	1	0	1
3449:	0	0	0	1	0	0	1	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	2	0
3473:	0	0	1	0	0	0	0	0
3481:	0	1	0	1	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	1	0	0	0	0	0	0	1
3505:	0	0	0	1	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	0	1	0	0	1	0	0	0
3529:	0	0	0	0	0	0	1	1
3537:	0	0	0	0	2	0	0	0
3545:	0	0	0	0	0	1	0	0
3553:	0	0	1	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	1	0	1	0	0
3585:	0	0	0	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	0	0	0	0	0	0
3633:	1	0	1	0	0	0	0	0
3641:	1	0	0	0	0	0	0	0
3649:	0	0	0	0	0	1	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	1	0	0	0	0	0
3673:	0	0	0	0	0	0	0	1
3681:	0	0	0	0	0	0	0	1
3689:	0	2	0	0	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	1	0	0	0	0	0	0	0
3713:	0	0	1	0	0	0	1	0
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	0	0
3737:	0	0	0	0	0	1	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	1	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	1	0	0	0	0	0	0

3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	0	0	0	0	0	0	0	0
3825:	0	0	0	0	0	0	0	1
3833:	0	1	1	0	1	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	1	1	0	0	1	1	0	0
3857:	1	0	0	0	0	0	0	0
3865:	0	0	0	0	0	0	0	0
3873:	1	0	0	1	1	0	0	0
3881:	0	1	0	0	0	0	1	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	1	0
3913:	0	0	0	0	0	0	0	0
3921:	1	0	0	0	0	0	1	1
3929:	0	1	0	0	0	0	0	0
3937:	0	0	1	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	2	1	0	1	0	0	0
3969:	0	0	1	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	1	0	0	0	0	1	0	0
4001:	0	0	0	1	0	0	0	0
4009:	0	1	0	0	1	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	0	0	1
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	1	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	1	0	0	0	0
4065:	0	0	0	0	1	0	0	0
4073:	0	0	0	0	0	0	1	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	1	0	0	1	0	0

481113

Sample ID : 1303013-05

Page : 1
Acquisition date : 1-APR-2013 11:03:08

VAX/VMS Peak Search Report Generated 1-APR-2013 12:03:26.75

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301305_GE1_GAS1202_190115.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : MQZ-49-130303
Deposition Date :
Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 11:03:08.
Sample ID : 1303013-05 Sample Quantity : 5.16370E+02 GRAM
Sample type : SOLID Sample Geometry : 0
Detector name : GE1 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:03.99 0.1%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	46.05*	612	2122	1.58	46.28	43	7	26.3		PB-210
0	62.46*	417	4263	1.75	62.70	60	8	55.1		TH-234
0	76.22*	4771	4328	3.39	76.45	72	8	5.6		
1	83.87*	403	1883	1.33	84.10	82	16	30.4	5.57E+01	
1	87.87*	974	2049	1.61	88.10	82	16	15.6		NP-237 SN-126 CD-109
1	92.62*	922	1787	1.62	92.85	82	16	16.1		
0	112.29*	137	1909	1.50	112.52	110		7107.4		
0	143.41*	264	1631	2.41	143.63	141	6	50.2		
0	154.33	123	1669	1.73	154.55	152		6107.0		
0	186.18*	1353	1994	1.73	186.40	183	8	12.7		RA-226
3	238.65*	224	423	1.43	238.87	238	9	25.3	3.37E+01	PB-212
3	241.96*	1589	719	1.49	242.17	238	9	6.8		RA-224
1	255.94	48	282	1.46	256.16	255	8	87.1	7.27E+00	
1	258.73	141	679	1.79	258.94	255	8	58.2		
0	271.85	377	1563	6.27	272.07	267	14	45.7		LU-173
0	284.79	103	908	2.92	285.01	281		8103.7		
0	295.22*	3211	1029	1.89	295.44	291	9	5.1		PB-214
0	330.08	157	635	4.11	330.30	327	8	57.8		
0	339.13*	166	782	1.98	339.34	335	10	65.0		AC-228
0	351.90*	5891	755	1.40	352.12	347	10	3.1		PB-214
0	388.19	166	557	3.47	388.40	384	9	53.5		
0	427.13	64	456	3.36	427.33	425		8118.1		
0	481.30	61	233	1.52	481.50	479	6	83.4		
0	486.70	46	237	2.82	486.90	485		6109.9		
0	510.82*	121	352	2.70	511.02	507	11	64.8		
0	561.03	56	245	1.78	561.23	557		8101.1		
0	583.05*	104	280	2.25	583.24	579	8	59.8		TL-208
0	609.38*	4272	337	1.93	609.57	605	10	3.5		BI-214
0	665.43	92	188	1.85	665.62	663	8	55.8		
0	702.80	79	153	1.95	702.98	700	7	56.8		
0	741.41	52	232	1.50	741.59	737		10112.3		
0	768.25	400	238	1.90	768.43	764	10	17.6		
0	786.56	79	187	1.52	786.74	782	9	66.9		
1	805.99	124	110	2.10	806.17	803	21	32.1	1.43E+00	

AG
4/2/13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	814.01	30	115	2.10	814.19	803	211	21.4		
0	839.53	43	136	1.19	839.71	837	6	90.5		
0	911.02*	112	126	3.54	911.19	907	8	40.2		AC-228
0	917.58	33	78	1.93	917.75	916	5	87.5		
0	934.32*	214	170	1.86	934.49	931	8	25.3		
2	964.70	47	108	1.78	964.87	961	13	71.3	1.53E+00	
2	968.83*	68	105	1.70	969.00	961	13	50.6		AC-228
0	1002.10*	53	170	2.66	1002.26	997	10	95.6		PA-234M
0	1051.90	52	111	1.69	1052.06	1048	9	79.0		
0	1120.37*	893	138	2.09	1120.53	1116	9	8.1		BI-214
0	1154.98	122	115	2.21	1155.13	1151	9	36.6		
0	1238.23	341	122	2.11	1238.38	1234	10	16.3		
0	1253.03	40	103	2.55	1253.18	1247	10	101.4		
0	1259.44	35	66	2.51	1259.59	1257	7	82.8		
0	1281.24	100	109	2.11	1281.39	1276	11	45.2		
0	1377.82*	246	88	1.94	1377.96	1372	11	19.5		
0	1386.16*	45	79	1.83	1386.30	1383	10	79.4		
1	1398.07	15	22	2.33	1398.21	1397	21	89.2	3.80E+00	
1	1401.65	78	50	2.33	1401.79	1397	21	38.0		
1	1408.08	146	44	2.33	1408.21	1397	21	22.9		
1	1411.08	27	41	2.33	1411.21	1397	21	120.5		
0	1460.89*	515	97	1.89	1461.02	1457	10	11.4		K-40
0	1509.22	86	133	2.31	1509.35	1504	11	55.8		
0	1544.47	41	76	1.87	1544.59	1540	9	84.0		
0	1583.83	36	43	2.82	1583.96	1580	7	68.6		
0	1593.99	23	32	2.00	1594.12	1591	6	86.5		
3	1658.29	13	10	2.92	1658.41	1656	14	94.2	3.91E+00	
3	1661.23	56	14	2.73	1661.35	1656	14	37.3		
3	1665.10	15	11	2.42	1665.22	1656	14	118.2		
0	1729.65	163	30	2.09	1729.76	1724	10	20.1		
0	1764.64*	700	36	2.24	1764.76	1759	12	8.3		BI-214
0	1838.64	14	18	1.29	1838.75	1834	9	119.0		
0	1847.80	102	27	2.10	1847.91	1843	11	28.0		
0	1974.47	6	7	2.48	1974.57	1972	5	141.2		
1	2010.09	11	10	2.52	2010.19	2003	16	108.5	1.25E+00	
1	2015.68	10	6	2.52	2015.77	2003	16	103.1		
0	2089.02	7	2	1.19	2089.11	2085	8	103.0		
0	2118.21*	50	13	1.99	2118.30	2113	10	38.7		
0	2160.91	7	1	2.40	2160.99	2158	6	95.7		
0	2204.04	178	21	2.66	2204.12	2199	13	18.2		BI-214
0	2240.30	8	0	3.25	2240.38	2237	7	70.7		
0	2293.47	9	5	1.85	2293.55	2289	7	110.5		
0	2383.93	5	0	1.50	2384.00	2381	6	89.4		
0	2447.67	67	2	3.05	2447.73	2443	9	25.8		
0	2614.03*	30	0	2.84	2614.08	2609	9	39.8		TL-208

Total number of lines in spectrum 79
Number of unidentified lines 44
Number of lines tentatively identified by NID 35 44.30%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/GRAM	pCi/GRAM	2-Sigma Error	%Error	
K-40	1.28E+09Y	1.00	1.391E+01	1.391E+01	0.215E+01	15.46	
TL-208	1.41E+10Y	1.00	3.784E-01	3.784E-01	1.309E-01	34.60	
PB-210	22.26Y	1.00	8.129E+00	8.150E+00	2.262E+00	27.75	
PB-212	1.41E+10Y	1.00	3.547E-01	3.547E-01	1.199E-01	33.80	
BI-214	1602.00Y	1.00	1.375E+01	1.375E+01	0.092E+01	6.66	
PB-214	1602.00Y	1.00	1.428E+01	1.428E+01	0.237E+01	16.57	
RA-224	1.41E+10Y	1.00	2.861E+01	2.861E+01	0.682E+01	23.84	
RA-226	1602.00Y	1.00	2.531E+01	2.531E+01	4.653E+01	183.83	
AC-228	1.41E+10Y	1.00	8.631E-01	8.631E-01	2.548E-01	29.52	
PA-234M	4.47E+09Y	1.00	1.251E+01	1.251E+01	1.202E+01	96.12	
TH-234	4.47E+09Y	1.00	5.542E+00	5.542E+00	3.090E+00	55.75	
Total Activity :			1.236E+02	1.237E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/GRAM	pCi/GRAM	2-Sigma Error	%Error	
CD-109	464.00D	1.05	1.285E+01	1.343E+01	0.264E+01	19.67	
SN-126	1.00E+05Y	1.00	1.292E+00	1.292E+00	0.242E+00	18.73	
NP-237	2.14E+06Y	1.00	3.792E+00	3.792E+00	0.708E+00	18.68	
Total Activity :			1.794E+01	1.851E+01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/GRAM	pCi/GRAM	2-Sigma Error	%Error	
LU-173	1.37Y	1.04	1.367E+00	1.424E+00	0.776E+00	54.49	
Total Activity :			1.367E+00	1.424E+00			

Grand Total Activity : 1.429E+02 1.436E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/GRAM	pCi/GRAM	%Error	
K-40	1460.81	10.67*	5.045E-01	1.391E+01	1.391E+01	15.46	OK
Final Mean for 1 Valid Peaks = 1.391E+01+/- 2.150E+00 (15.46%)							
TL-208	583.14	30.22*	1.055E+00	4.762E-01	4.762E-01	60.84	OK
	860.37	4.48	7.641E-01	-----	Line Not Found	-----	Absent
	2614.66	35.85	3.498E-01	3.533E-01	3.533E-01	41.54	OK
Final Mean for 2 Valid Peaks = 3.784E-01+/- 1.309E-01 (34.60%)							
PB-210	46.50	4.25*	2.577E+00	8.129E+00	8.150E+00	27.75	OK
Final Mean for 1 Valid Peaks = 8.150E+00+/- 2.262E+00 (27.75%)							
PB-212	238.63	44.60*	2.057E+00	3.547E-01	3.547E-01	33.80	OK
	300.09	3.41	1.767E+00	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 3.547E-01+/- 1.199E-01 (33.80%)							
BI-214	609.31	46.30*	1.017E+00	1.319E+01	1.319E+01	11.23	OK
	1120.29	15.10	6.174E-01	1.392E+01	1.392E+01	12.35	OK
	1764.49	15.80	4.419E-01	1.457E+01	1.457E+01	13.04	OK
	2204.22	4.98	3.841E-01	1.355E+01	1.355E+01	21.21	OK
Final Mean for 4 Valid Peaks = 1.375E+01+/- 9.159E-01 (6.66%)							
PB-214	295.21	19.19	1.787E+00	1.361E+01	1.361E+01	29.67	OK
	351.92	37.19*	1.574E+00	1.463E+01	1.463E+01	19.95	OK
Final Mean for 2 Valid Peaks = 1.428E+01+/- 2.366E+00 (16.57%)							
RA-224	240.98	3.95*	2.045E+00	2.861E+01	2.861E+01	23.84	OK
Final Mean for 1 Valid Peaks = 2.861E+01+/- 6.821E+00 (23.84%)							
RA-226	186.21	3.28*	2.369E+00	2.531E+01	2.531E+01	183.83	OK
Final Mean for 1 Valid Peaks = 2.531E+01+/- 4.653E+01 (183.83%)							
AC-228	338.32	11.40	1.621E+00	1.306E+00	1.306E+00	68.75	OK
	911.07	27.70*	7.291E-01	8.054E-01	8.054E-01	41.30	OK
	969.11	16.60	6.934E-01	8.578E-01	8.578E-01	51.47	OK
Final Mean for 3 Valid Peaks = 8.631E-01+/- 2.548E-01 (29.52%)							
PA-234M	1001.03	0.92*	6.754E-01	1.251E+01	1.251E+01	96.12	OK
Final Mean for 1 Valid Peaks = 1.251E+01+/- 1.202E+01 (96.12%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.882E+00	5.542E+00	5.542E+00	55.75	OK

Final Mean for 1 Valid Peaks = 5.542E+00+/- 3.090E+00 (55.75%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
CD-109	88.03	3.72*	2.962E+00	1.285E+01	1.343E+01	19.67	OK

Final Mean for 1 Valid Peaks = 1.343E+01+/- 2.641E+00 (19.67%)

SN-126	87.57	37.00*	2.963E+00	1.292E+00	1.292E+00	18.73	OK
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Final Mean for 1 Valid Peaks = 1.292E+00+/- 2.420E-01 (18.73%)

NP-237	86.50	12.60*	2.964E+00	3.792E+00	3.792E+00	18.68	OK
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Final Mean for 1 Valid Peaks = 3.792E+00+/- 7.082E-01 (18.68%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
LU-173	100.72	5.24	2.923E+00	-----	Line Not Found	-----	Absent
	272.11	21.20*	1.890E+00	1.367E+00	1.424E+00	54.49	OK

Final Mean for 1 Valid Peaks = 1.424E+00+/- 7.760E-01 (54.49%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.391E+01	2.150E+00	1.144E+00	1.105E-01	12.162
CD-109	1.343E+01	2.641E+00	2.873E+00	3.239E-01	4.675
SN-126	1.292E+00	2.420E-01	2.763E-01	2.639E-02	4.676
LU-173	1.424E+00	7.760E-01	4.152E-01	1.222E-01	3.430
TL-208	3.784E-01	1.309E-01	3.041E-01	3.089E-02	1.244
PB-210	8.150E+00	2.262E+00	2.285E+00	1.802E-01	3.566
PB-212	3.547E-01	1.199E-01	2.278E-01	5.017E-02	1.557
BI-214	1.375E+01	9.159E-01	1.968E-01	1.950E-02	69.890
PB-214	1.428E+01	2.366E+00	2.255E-01	4.351E-02	63.328
RA-224	2.861E+01	6.821E+00	2.603E+00	5.860E-01	10.989
RA-226	2.531E+01	4.653E+01	3.052E+00	5.596E+00	8.293
AC-228	8.631E-01	2.548E-01	3.582E-01	3.119E-02	2.409
PA-234M	1.251E+01	1.202E+01	1.179E+01	1.020E+00	1.061
TH-234	5.542E+00	3.090E+00	2.912E+00	2.162E-01	1.903
NP-237	3.792E+00	7.082E-01	8.106E-01	7.655E-02	4.678

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-5.635E-01		7.918E-01	1.202E+00	1.286E-01	-0.469
NA-22	-7.777E-03		7.536E-02	1.155E-01	1.032E-02	-0.067
AL-26	-9.309E-03		3.839E-02	6.741E-02	6.159E-03	-0.138
TI-44	-1.167E-01		9.437E-02	1.204E-01	9.354E-03	-0.969
SC-46	-9.611E-02		8.187E-02	1.316E-01	1.152E-02	-0.730
V-48	1.051E-01		2.164E-01	3.889E-01	3.374E-02	0.270
CR-51	-1.326E+00		1.242E+00	1.821E+00	4.602E-01	-0.728
MN-54	2.178E-02		7.549E-02	1.201E-01	1.082E-02	0.181
CO-56	1.543E-02		8.622E-02	1.367E-01	1.225E-02	0.113
CO-57	4.632E-02		6.653E-02	1.090E-01	1.212E-02	0.425
CO-58	5.405E-03		7.873E-02	1.380E-01	1.258E-02	0.039
FE-59	-1.096E-01		1.849E-01	3.073E-01	2.815E-02	-0.357
CO-60	-8.935E-03		6.788E-02	1.174E-01	9.619E-03	-0.076
ZN-65	9.824E-02		1.672E-01	2.711E-01	2.280E-02	0.362
SE-75	-4.102E-02		1.360E-01	1.712E-01	4.744E-02	-0.240
RB-82	3.797E-01		1.301E+00	1.681E+00	1.545E-01	0.226
RB-83	-4.729E-02		1.476E-01	2.291E-01	3.847E-02	-0.206
KR-85	1.084E+01		1.219E+01	2.206E+01	2.338E+00	0.492
SR-85	6.462E-02		7.264E-02	1.315E-01	1.394E-02	0.492
Y-88	2.683E-02		5.661E-02	1.003E-01	9.107E-03	0.268
NB-93M	-7.966E+00		2.130E+00	6.401E-01	1.549E-01	-12.446
NB-94	2.462E-02		6.138E-02	1.093E-01	9.672E-03	0.225
NB-95	7.374E-01		1.675E-01	2.905E-01	2.678E-02	2.538
ZR-95	6.789E-02		1.487E-01	2.652E-01	2.666E-02	0.256
RU-103	-1.266E-02		9.186E-02	1.608E-01	2.491E-02	-0.079
RU-106	7.828E-02		5.409E-01	9.582E-01	1.354E-01	0.082
AG-108M	-3.620E-02		6.315E-02	1.069E-01	9.914E-03	-0.339
AG-110M	1.971E-02		6.331E-02	1.024E-01	9.539E-03	0.192

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-113	1.182E-01		1.026E-01	1.697E-01	1.835E-02	0.697
TE123M	-3.959E-02		9.132E-02	1.336E-01	1.265E-02	-0.296
SB-124	-3.469E-04		8.822E-02	1.389E-01	1.385E-02	-0.002
I-125	-7.235E-01		1.278E+00	2.088E+00	1.962E-01	-0.346
SB-125	2.398E-01	+	2.847E-01	3.481E-01	3.772E-02	0.689
SB-126	3.363E-01		5.428E-01	9.784E-01	9.074E-02	0.344
SB-127	8.311E+00		2.954E+01	5.262E+01	4.882E+00	0.158
I-129	4.924E-02		1.171E-01	1.964E-01	2.156E-02	0.251
I-131	-4.097E-01		7.589E-01	1.310E+00	2.190E-01	-0.313
BA-133	-8.712E-03		8.927E-02	1.415E-01	2.973E-02	-0.062
CS-134	2.898E-02		6.807E-02	1.094E-01	1.091E-02	0.265
CS-135	6.561E-01		4.275E-01	5.996E-01	1.710E-01	1.094
CS-136	1.368E-02		4.150E-01	6.480E-01	5.725E-02	0.021
CS-137	4.404E-03		6.678E-02	1.065E-01	9.884E-03	0.041
LA-138	-1.022E-02		9.813E-02	1.689E-01	1.594E-02	-0.061
CE-139	-1.534E-02		8.428E-02	1.350E-01	1.232E-02	-0.114
BA-140	4.499E-01		1.039E+00	1.839E+00	6.194E-01	0.245
LA-140	4.444E-01		3.727E-01	6.560E-01	6.173E-02	0.677
CE-141	2.125E-01		2.557E-01	3.804E-01	9.431E-02	0.559
CE-144	-1.437E-01		5.529E-01	8.880E-01	9.428E-02	-0.162
PM-144	3.571E-02		6.234E-02	1.021E-01	9.484E-03	0.350
PM-145	7.692E-02		2.701E-01	4.428E-01	2.885E-01	0.174
PM-146	8.767E-02		1.256E-01	2.263E-01	2.427E-02	0.387
ND-147	-1.889E+00		2.543E+00	4.310E+00	4.535E-01	-0.438
EU-152	2.760E+00	+	7.171E-01	1.273E+00	1.471E-01	2.169
GD-153	-2.803E-01		2.571E-01	4.051E-01	4.124E-02	-0.692
EU-154	6.757E-02		1.984E-01	3.194E-01	2.854E-02	0.212
EU-155	1.564E+00	+	2.921E-01	4.055E-01	3.829E-02	3.856
EU-156	6.688E-01		2.205E+00	3.902E+00	8.984E-01	0.171
HO-166M	-3.817E-02		1.073E-01	1.754E-01	1.627E-02	-0.218
HF-172	-1.042E-01		4.915E-01	7.916E-01	8.664E-02	-0.132
LU-172	1.381E+00		2.212E+00	3.992E+00	3.378E-01	0.346
HF-175	5.060E-02		1.114E-01	1.454E-01	3.047E-02	0.348
LU-176	1.628E-02		5.745E-02	9.231E-02	2.515E-02	0.176
TA-182	7.206E+00	+	8.895E-01	1.198E+00	1.005E-01	6.013
IR-192	-1.142E-02		1.402E-01	2.457E-01	2.633E-02	-0.046
HG-203	1.258E-02		1.379E-01	1.775E-01	5.537E-02	0.071
BI-207	-1.022E-02		5.246E-02	8.727E-02	8.962E-03	-0.117
BI-210M	7.863E-02		1.550E-01	2.021E-01	5.476E-02	0.389
PB-211	1.835E+00		1.979E+00	3.548E+00	3.776E-01	0.517
BI-212	4.120E-01		4.805E-01	8.745E-01	8.106E-02	0.471
RN-219	6.314E-01		8.705E-01	1.556E+00	1.654E-01	0.406
RA-223	1.020E+00		1.460E+00	2.350E+00	5.750E-01	0.434
RA-225	-1.683E-01		7.859E-01	1.194E+00	1.029E-01	-0.141
TH-227	1.155E+00		6.596E-01	9.461E-01	2.032E-01	1.220
TH-230	-2.882E+01		2.407E+01	3.074E+01	2.384E+00	-0.937
PA-231	1.990E+00		2.644E+00	3.914E+00	1.091E+00	0.508
TH-231	6.836E-02		5.283E-01	8.825E-01	1.138E-01	0.077

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-233	1.149E-01		3.007E-01	4.823E-01	1.620E-01	0.238
PA-234	-3.060E-02		2.706E-01	4.363E-01	4.676E-02	-0.070
U-235	1.373E+00	+	7.357E-01	9.588E-01	1.757E-01	1.432
AM-241	3.586E-01		1.951E-01	3.026E-01	2.167E-02	1.185
AM-243	2.227E+00		2.451E-01	2.560E-01	2.134E-02	8.700
CM-243	3.676E-01		4.426E-01	6.496E-01	1.997E-01	0.566

Total number of lines in spectrum 79
Number of unidentified lines 44
Number of lines tentatively identified by NID 35 44.30%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.391E+01	1.391E+01	0.215E+01	15.46	
TL-208	1.41E+10Y	1.00	3.784E-01	3.784E-01	1.309E-01	34.60	
PB-210	22.26Y	1.00	8.129E+00	8.150E+00	2.262E+00	27.75	
PB-212	1.41E+10Y	1.00	3.547E-01	3.547E-01	1.199E-01	33.80	
BI-214	1602.00Y	1.00	1.375E+01	1.375E+01	0.092E+01	6.66	
PB-214	1602.00Y	1.00	1.428E+01	1.428E+01	0.237E+01	16.57	
RA-224	1.41E+10Y	1.00	2.861E+01	2.861E+01	0.682E+01	23.84	
RA-226	1602.00Y	1.00	2.531E+01	2.531E+01	4.653E+01	183.83	
AC-228	1.41E+10Y	1.00	8.631E-01	8.631E-01	2.548E-01	29.52	
PA-234M	4.47E+09Y	1.00	1.251E+01	1.251E+01	1.202E+01	96.12	
TH-234	4.47E+09Y	1.00	5.542E+00	5.542E+00	3.090E+00	55.75	
Total Activity :			1.236E+02	1.237E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CD-109	464.00D	1.05	1.285E+01	1.343E+01	0.264E+01	19.67	
SN-126	1.00E+05Y	1.00	1.292E+00	1.292E+00	0.242E+00	18.73	
NP-237	2.14E+06Y	1.00	3.792E+00	3.792E+00	0.708E+00	18.68	
Total Activity :			1.794E+01	1.851E+01			

Nuclide Type : ACTIVATION

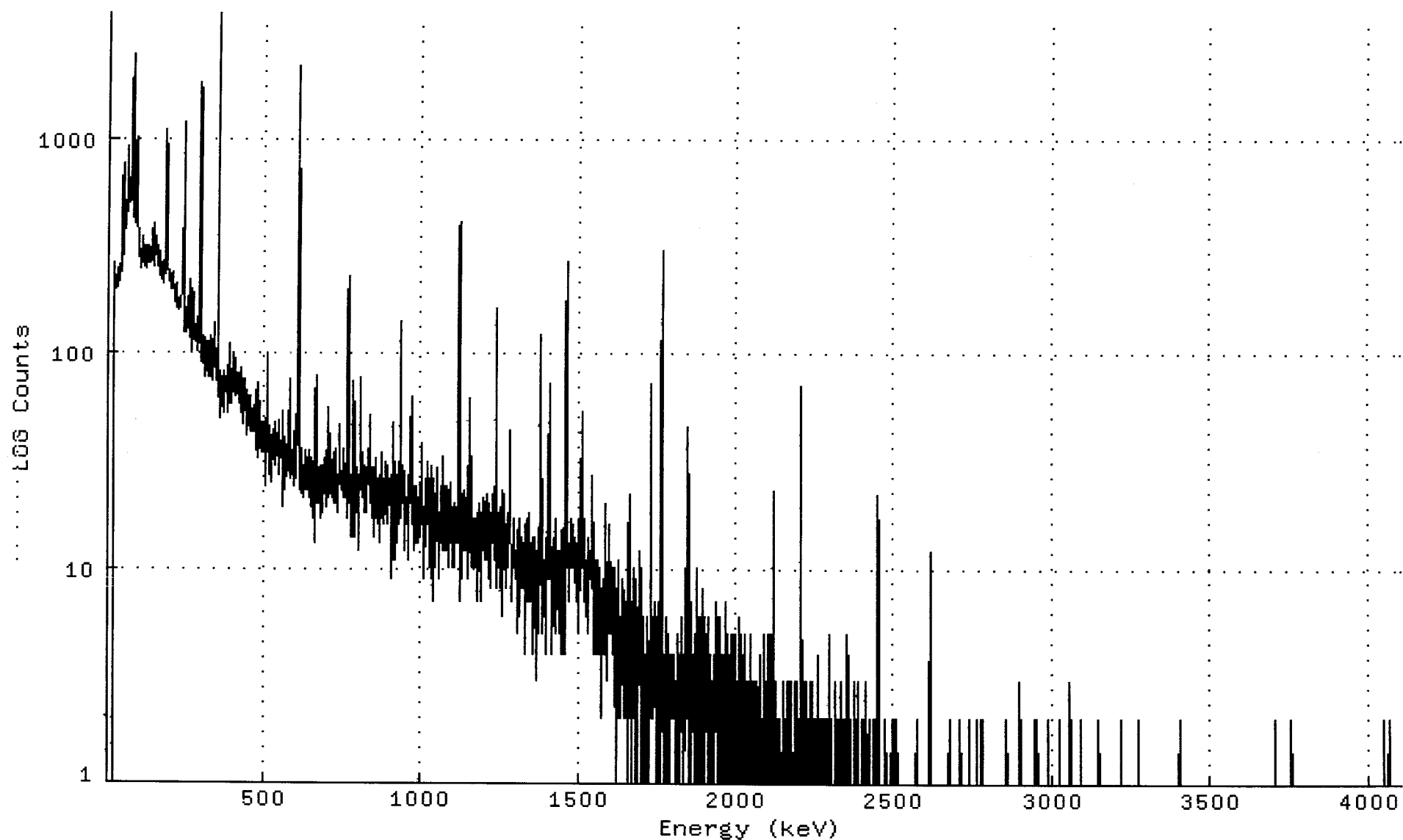
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
LU-173	1.37Y	1.04	1.367E+00	1.424E+00	0.776E+00	54.49	
Total Activity :			1.367E+00	1.424E+00			

Grand Total Activity : 1.429E+02 1.436E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301305_GE1_GAS1202_190115.CNF;1
Title :
Sample Title: MQZ-49-130303
Start Time: 1-APR-2013 11:03: Sample Time: 3-MAR-2013 00:00: Energy Offset: -2.35223E-01
Real Time : 0 01:00:03.99 Sample ID : 1303013-05 Energy Slope : 1.00007E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301305_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	148	260	216	222	196	213
25:	205	227	207	227	218	201	217	247
33:	208	199	215	212	244	247	221	253
41:	235	265	288	298	311	565	760	287
49:	281	369	382	317	505	438	382	377
57:	398	410	468	474	504	540	896	800
65:	521	529	534	630	510	496	556	507
73:	582	699	1878	946	2415	1549	542	559
81:	575	421	440	768	496	400	866	958
89:	428	602	440	493	992	464	427	327
97:	286	330	313	326	276	301	278	259
105:	266	245	285	279	259	271	292	300
113:	342	290	288	272	285	259	252	260
121:	310	269	288	243	278	260	269	312
129:	272	280	274	279	284	267	284	258
137:	308	268	292	281	278	304	354	394
145:	334	251	282	276	292	285	294	283
153:	294	320	346	283	266	276	281	259
161:	257	234	294	265	272	225	231	261
169:	248	239	223	227	219	234	221	208
177:	255	265	220	234	247	278	241	241
185:	318	1087	793	249	238	243	240	248
193:	224	224	241	241	214	213	205	201
201:	227	230	197	202	235	225	209	206
209:	201	199	190	175	181	194	204	175
217:	160	162	188	177	209	172	166	173
225:	173	177	159	158	162	163	170	175
233:	171	183	185	269	204	240	376	199
241:	237	1165	555	164	143	124	162	136
249:	127	125	123	140	147	157	130	168
257:	159	154	216	129	150	123	134	134
265:	99	113	107	122	150	195	181	149
273:	114	158	163	141	117	116	114	113
281:	113	118	123	144	136	132	119	126
289:	102	128	110	111	135	196	1771	1575
297:	169	90	96	124	119	89	107	91
305:	118	95	90	84	89	91	77	79
313:	116	107	89	102	81	86	91	86
321:	89	76	102	113	108	84	77	119
329:	95	120	107	96	94	84	73	88
337:	96	136	116	85	85	98	104	73
345:	83	80	79	86	95	113	713	3834
353:	1506	108	61	67	76	49	67	74
361:	81	56	57	76	71	65	69	74
369:	69	68	66	52	82	61	67	67
377:	76	77	74	72	64	52	70	62
385:	77	71	108	77	109	82	79	58
393:	59	76	58	62	59	73	95	65
401:	87	99	89	75	93	87	81	91
409:	77	63	64	66	80	76	79	77
417:	65	63	77	80	58	62	65	69
425:	52	74	84	78	72	62	48	50

433:	59	46	75	53	56	59	56	55
441:	60	41	60	55	66	50	62	46
449:	50	45	50	46	48	55	56	54
457:	62	43	45	49	48	54	50	43
465:	54	49	49	43	57	52	45	39
473:	50	66	35	42	47	44	32	55
481:	72	42	50	43	36	56	59	56
489:	42	34	45	47	36	44	42	38
497:	37	46	34	47	41	29	49	39
505:	49	36	24	48	53	67	100	81
513:	57	27	42	37	30	37	45	36
521:	31	25	37	39	41	40	44	40
529:	41	38	33	30	43	47	45	44
537:	47	37	36	42	33	37	40	37
545:	48	40	43	31	27	40	32	33
553:	34	34	39	32	36	19	50	53
561:	34	38	40	31	25	38	33	23
569:	29	32	35	35	37	34	28	32
577:	36	53	34	42	55	53	75	74
585:	36	26	31	30	27	35	31	28
593:	43	31	42	31	39	24	32	43
601:	28	35	26	51	40	38	37	210
609:	1843	2134	242	30	27	23	25	30
617:	22	29	28	28	29	36	23	30
625:	21	28	28	30	23	27	35	35
633:	29	33	23	27	29	26	28	26
641:	32	23	29	21	25	35	28	32
649:	19	21	23	21	25	17	31	22
657:	29	19	25	28	32	30	13	27
665:	59	78	33	30	20	20	30	29
673:	20	23	25	25	28	20	30	27
681:	17	26	24	30	18	30	27	30
689:	21	32	25	25	22	29	26	27
697:	28	35	19	22	26	40	55	35
705:	29	25	21	42	22	27	23	32
713:	24	24	21	23	26	27	30	34
721:	31	25	24	20	23	36	26	35
729:	32	20	27	22	26	27	26	18
737:	19	23	25	28	28	34	46	27
745:	27	27	28	24	23	26	26	21
753:	34	36	28	32	29	29	25	24
761:	26	21	29	17	21	42	48	174
769:	226	48	20	21	21	28	26	21
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793:	29	23	29	24	18	26	25	21
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809:	23	25	22	23	21	34	26	25
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873:	22	19	28	24	17	24	19	16
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897:	25	26	20	26	25	15	22	27
905:	9	23	20	24	24	42	47	45

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945:	21	12	20	28	14	23	16	18
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1089:	16	14	17	15	20	13	20	25
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1121:	402	86	18	7	13	21	9	14
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1377:	74	122	50	13	14	5	9	15
1385:	16	26	16	7	10	10	11	6

1393:	11	6	12	11	4	14	10	18
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1409:	50	12	18	9	10	8	10	10
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1425:	13	17	10	6	8	8	10	8
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1505:	12	9	10	23	45	53	27	11
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1601:	7	7	5	5	5	5	7	4
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1697:	4	5	6	0	10	2	1	4
1705:	6	4	4	2	3	1	2	4
1713:	4	4	1	1	4	6	3	3
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1777:	1	6	4	2	1	2	0	3
1785:	5	1	4	3	1	2	2	4
1793:	1	4	3	3	3	3	2	2
1801:	2	3	2	3	4	2	3	2
1809:	1	2	3	1	5	2	0	1
1817:	5	2	1	0	2	4	2	4
1825:	2	3	6	2	3	3	1	4
1833:	1	1	2	1	2	10	5	6
1841:	2	3	3	2	6	13	30	45
1849:	17	1	5	3	4	0	1	7
1857:	2	4	5	5	3	4	3	3
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1873:	6	10	3	1	2	4	0	4
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1889:	1	6	5	3	2	3	1	8
1897:	3	6	4	1	1	0	3	3
1905:	4	5	3	3	6	5	3	3
1913:	2	3	1	4	2	3	3	2
1921:	1	1	0	1	2	3	3	1
1929:	3	4	4	2	1	3	7	6
1937:	4	3	2	5	2	1	4	2
1945:	6	1	4	3	3	3	6	2
1953:	2	0	3	4	2	3	4	3
1961:	1	1	2	2	1	1	0	7
1969:	2	4	2	0	5	4	4	0
1977:	3	2	1	2	4	2	5	2
1985:	4	2	1	2	3	5	1	1
1993:	5	1	1	5	3	1	2	3
2001:	2	2	1	3	3	3	0	0
2009:	1	6	5	2	1	3	2	5
2017:	2	0	2	4	2	0	3	1
2025:	1	0	5	0	3	2	1	3
2033:	0	2	1	2	3	0	1	2
2041:	1	0	2	5	1	1	0	2
2049:	2	1	1	2	3	3	1	3
2057:	2	2	1	0	3	0	1	0
2065:	0	2	1	2	1	1	1	2
2073:	4	2	0	2	3	2	2	0
2081:	0	1	0	0	0	0	1	1
2089:	5	1	1	0	1	1	1	3
2097:	1	3	2	1	5	1	5	0
2105:	5	2	3	3	1	5	1	0
2113:	2	1	3	6	6	16	23	6
2121:	1	0	3	1	3	2	2	1
2129:	1	2	0	2	1	2	1	2
2137:	1	0	1	1	1	0	1	0
2145:	1	2	2	3	0	2	0	1
2153:	1	2	1	1	0	1	0	2
2161:	3	2	0	0	3	2	1	1
2169:	0	0	3	1	2	2	2	0
2177:	0	1	1	1	1	0	0	1
2185:	1	1	3	1	0	1	0	3
2193:	2	1	2	2	1	2	0	1
2201:	0	11	44	70	53	11	2	2
2209:	2	1	2	2	2	0	0	1
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2225:	0	1	1	1	1	2	0	2
2233:	0	0	3	0	0	1	1	3
2241:	0	3	0	0	0	0	2	1
2249:	2	1	0	1	1	0	4	1
2257:	2	1	3	0	2	0	0	1
2265:	1	0	2	2	1	1	2	1
2273:	1	1	0	1	2	1	0	1
2281:	0	1	1	1	2	2	1	1
2289:	1	1	1	2	4	5	0	1
2297:	2	0	0	0	1	2	0	1
2305:	1	1	0	0	0	0	3	0
2313:	2	0	2	1	1	0	0	1
2321:	2	0	2	0	1	1	1	0
2329:	3	0	0	0	1	0	2	0
2337:	1	0	2	0	1	0	2	1
2345:	2	0	2	0	1	0	5	0

2353:	1	1	4	0	1	2	0	1
2361:	1	2	0	0	1	0	1	0
2369:	1	1	1	0	0	1	2	3
2377:	0	0	2	0	0	0	1	3
2385:	1	0	0	0	0	0	0	0
2393:	0	0	1	0	1	2	0	0
2401:	0	1	1	1	2	2	0	0
2409:	0	0	0	3	1	1	1	0
2417:	0	1	2	0	1	1	0	1
2425:	0	1	0	1	1	0	0	1
2433:	0	0	2	0	1	0	2	0
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2449:	16	3	0	0	0	0	1	0
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2465:	1	0	0	1	0	0	0	0
2473:	2	0	0	1	0	1	0	0
2481:	0	1	0	0	1	0	0	0
2489:	0	0	1	2	0	1	1	0
2497:	0	0	2	0	0	0	1	0
2505:	1	1	0	1	2	0	1	0
2513:	0	1	1	0	1	0	1	0
2521:	1	0	1	0	1	0	1	0
2529:	1	1	0	0	1	1	1	0
2537:	0	0	0	0	1	0	1	0
2545:	0	1	0	0	0	0	0	0
2553:	1	0	0	0	1	0	0	1
2561:	0	0	0	0	0	0	0	0
2569:	0	1	2	0	0	0	1	1
2577:	0	0	0	1	0	0	1	0
2585:	0	0	0	0	0	1	0	1
2593:	1	0	0	0	0	0	0	0
2601:	0	0	0	0	0	0	1	0
2609:	0	1	0	2	7	12	10	4
2617:	0	0	0	0	0	0	1	0
2625:	0	0	0	0	1	0	0	0
2633:	0	0	0	0	0	0	0	1
2641:	1	0	0	0	0	0	0	0
2649:	0	1	0	0	1	0	0	0
2657:	0	0	0	0	1	0	0	0
2665:	0	0	0	0	0	0	0	0
2673:	0	2	0	0	1	0	0	0
2681:	0	0	1	1	0	1	0	0
2689:	0	0	0	1	1	1	1	0
2697:	0	0	1	0	1	0	0	0
2705:	0	0	0	0	2	0	0	0
2713:	0	0	1	0	1	0	0	0
2721:	0	1	0	0	1	1	0	0
2729:	0	0	1	0	0	0	1	2
2737:	0	0	0	0	0	1	0	0
2745:	1	0	0	0	1	0	1	0
2753:	0	0	0	0	1	1	0	2
2761:	0	0	0	0	0	0	1	1
2769:	0	0	1	0	0	0	2	0
2777:	0	0	2	0	0	0	0	0
2785:	0	1	0	0	0	0	0	0
2793:	0	0	0	1	1	0	0	0
2801:	1	0	0	0	0	0	0	0
2809:	0	0	0	0	1	0	0	0
2817:	0	0	0	1	0	0	0	0
2825:	1	0	0	0	0	1	0	0

2833:	0	1	1	0	0	1	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	0	0	0	0	0	2	1
2857:	1	0	0	0	0	1	1	0
2865:	1	0	1	0	0	0	0	0
2873:	0	1	1	0	0	0	0	0
2881:	0	0	0	0	1	0	0	0
2889:	0	0	1	1	0	1	0	3
2897:	0	2	0	0	0	0	0	0
2905:	0	0	0	1	1	0	1	1
2913:	1	0	0	0	0	0	0	0
2921:	0	1	0	0	1	0	0	0
2929:	0	0	0	0	0	1	0	0
2937:	0	0	0	0	0	0	0	2
2945:	0	0	0	0	0	0	0	2
2953:	0	1	0	1	1	0	0	0
2961:	0	0	1	0	0	0	1	0
2969:	0	0	0	0	0	1	0	1
2977:	1	0	0	0	0	1	0	0
2985:	0	0	2	0	0	0	1	0
2993:	1	1	1	0	1	0	0	0
3001:	0	0	1	1	1	1	0	0
3009:	1	0	0	0	0	0	0	0
3017:	0	1	0	0	0	0	2	0
3025:	0	0	1	1	0	0	0	0
3033:	0	0	1	0	0	0	0	0
3041:	1	0	0	0	0	0	0	0
3049:	0	0	0	0	3	0	0	0
3057:	0	2	1	0	0	0	0	0
3065:	0	0	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	0
3081:	0	0	0	0	1	0	0	1
3089:	2	0	0	1	0	0	0	0
3097:	0	0	0	1	0	0	1	0
3105:	0	0	0	0	0	0	0	0
3113:	0	0	0	0	0	1	0	1
3121:	0	0	0	0	0	0	0	1
3129:	0	1	0	1	0	0	0	0
3137:	0	1	0	0	0	0	0	0
3145:	0	2	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	0
3169:	0	0	0	0	1	0	0	0
3177:	0	0	0	1	0	0	0	0
3185:	0	0	0	0	0	0	0	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	0	0	1
3209:	0	1	0	1	0	0	0	0
3217:	0	2	0	0	0	0	0	1
3225:	1	0	1	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	1	0	0	0	0	1	0
3249:	0	0	0	0	0	1	1	0
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	1	0	0	2	0
3273:	1	0	0	0	1	0	0	0
3281:	0	0	0	1	0	0	0	0
3289:	0	0	0	0	0	0	1	0
3297:	0	0	0	0	1	0	0	1
3305:	0	1	0	0	0	1	0	1

3313:	1	0	0	0	0	0	0	0
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3329:	0	0	0	0	0	1	0	0
3337:	0	0	0	0	0	1	1	0
3345:	0	0	1	1	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	1	0	0	1	0	1	1	0
3369:	1	0	1	1	0	0	1	1
3377:	0	0	0	0	0	0	0	0
3385:	0	0	0	0	0	0	1	0
3393:	0	0	0	0	1	1	0	0
3401:	0	2	0	0	0	0	0	0
3409:	1	0	1	0	0	0	1	1
3417:	1	0	0	1	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	1	1	0	0	0
3441:	0	0	0	0	0	1	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	1
3465:	1	0	1	0	0	0	0	0
3473:	0	0	0	0	1	0	0	1
3481:	0	0	0	0	0	0	0	0
3489:	1	0	0	1	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	1	0	0	1	1	1	0	0
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3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	1	0	1	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	1	0	1
3569:	0	0	0	0	0	1	0	0
3577:	0	0	0	1	0	0	0	0
3585:	0	0	0	0	1	0	0	0
3593:	0	0	0	1	0	0	0	0
3601:	0	0	0	0	0	0	0	1
3609:	0	0	0	0	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	0	1	1	1	0	0	0	0
3633:	0	0	0	0	0	1	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	1	0	0
3657:	0	0	0	0	0	0	0	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	0	0	0
3681:	0	0	0	0	0	0	0	1
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	0	0	0	2	0
3705:	0	0	0	0	0	0	1	0
3713:	0	0	1	0	0	0	0	0
3721:	0	0	0	0	1	0	0	0
3729:	0	0	0	1	0	0	0	0
3737:	0	0	0	0	0	1	0	1
3745:	0	0	1	0	0	0	1	0
3753:	2	1	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	0	0	0	0	1	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	1	0	0	0

3793:	0	0	0	0	0	1	1	0
3801:	0	0	0	0	1	0	0	0
3809:	0	0	0	0	1	0	0	0
3817:	0	0	0	0	0	0	0	0
3825:	0	1	1	0	0	0	0	0
3833:	0	0	0	0	0	0	0	0
3841:	1	0	0	0	0	0	1	0
3849:	0	1	0	0	0	0	0	0
3857:	0	1	0	0	0	0	0	0
3865:	0	0	0	1	0	0	1	0
3873:	0	0	0	1	0	0	0	0
3881:	0	0	0	1	0	0	0	1
3889:	1	0	0	0	1	0	0	0
3897:	0	0	0	0	1	0	0	0
3905:	0	0	0	0	0	1	1	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	1	0	0	0
3929:	0	0	0	0	0	0	0	1
3937:	0	0	0	0	1	0	0	0
3945:	0	1	0	0	1	0	0	0
3953:	0	0	0	0	0	0	1	0
3961:	1	0	1	0	0	0	0	0
3969:	0	0	0	1	0	1	0	0
3977:	0	0	0	0	0	0	0	0
3985:	1	0	0	0	0	0	1	0
3993:	0	0	0	0	0	1	0	0
4001:	1	0	0	1	0	0	0	0
4009:	0	0	0	0	0	1	0	0
4017:	0	0	0	0	1	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	1	0	0	0	0
4041:	0	2	1	0	0	1	0	0
4049:	0	0	0	0	0	0	0	0
4057:	2	0	0	1	0	0	0	0
4065:	0	0	0	0	1	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	1	0
4089:	0	0	0	0	1	0	0	0

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Sample ID : 1303013-06

Acquisition date : 1-APR-2013 11:05:57

VAX/VMS Peak Search Report Generated 1-APR-2013 12:32:41.69

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301306_GE3_GAS1202_190116.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-51-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 11:05:57.
 Sample ID : 1303013-06 Sample Quantity : 5.71970E+02 GRAM
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE3 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:26:27.82 31%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	26.91	4015	226671	1.34	27.23	23	7	39.5		
0	31.43	4190	164828	1.27	31.75	30	5	29.2		
0	45.84*	77430	289448	1.61	46.16	44	6	2.3		PB-210
1	49.82	6529	101435	1.21	50.13	49	7	12.2	1.05E+02	TH-230 TH-227
1	52.75*	28082	213550	1.28	53.07	49	7	4.8		
0	62.26*	39042	485530	1.29	62.58	61	6	5.7		TH-230 TH-234
4	67.04	21339	161767	2.02	67.36	66	17	4.7	3.33E+04	TH-230
4	74.68*	234673	321600	1.39	75.00	66	17	0.9		AM-243
0	87.18	62883	436759	1.13	87.49	85	5	3.2		NP-237 SN-126 CD-109
0	93.09*	67257	386021	2.29	93.40	91	6	3.1		
0	98.05	24865	250148	1.69	98.37	97	5	6.2		
0	111.86	11256	295284	3.61	112.18	110	6	15.4		
0	121.31	1488	234731	1.54	121.63	120	5	97.8		CO-57
0	143.39*	13328	300308	1.51	143.71	142	6	13.1		U-235
0	153.95	12713	301161	1.52	154.27	152	6	13.8		
0	163.30	3813	223808	1.63	163.61	162	5	37.4		U-235
0	185.85*	190317	378925	1.52	186.16	182	9	1.3		RA-226
0	196.10*	2794	230203	1.30	196.42	194	6	54.5		
0	205.27	4301	203882	1.95	205.58	203	6	33.4		U-235
0	211.27	2930	158217	3.74	211.58	210	5	41.0		
1	235.60	15420	137883	1.55	235.91	233	15	7.3	3.13E+02	TH-227
1	241.70*	239538	132937	1.70	242.01	233	15	0.6		RA-224
4	255.79	8089	114605	1.67	256.10	254	9	12.8	5.59E+00	TH-227
4	258.55	15619	113226	1.80	258.86	254	9	6.7		
7	269.75	32197	104823	3.14	270.06	267	11	3.2	6.67E+01	
7	274.22	13122	123978	2.09	274.53	267	11	8.9		
0	284.75	3007	101038	3.16	285.06	283	5	32.0		
7	294.92*	511084	95952	1.72	295.23	291	13	0.3	1.04E+03	PB-214
7	298.69	30566	151775	2.64	299.00	291	13	6.3		
0	313.77	2609	97147	2.29	314.08	312	6	38.0		
0	323.56	4552	93594	1.57	323.86	322	6	21.5		RA-223
0	329.18	2936	78823	1.45	329.48	328	5	28.9		

AG
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It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	337.75*	1550	77084	1.40	338.05	337	5	54.0		
5	351.61*	840494	72209	1.69	351.92	346	15	0.2	7.92E+02	PB-214
5	354.92	47453	94497	2.46	355.22	346	15	4.1		
0	387.83	12361	110168	3.30	388.13	384	9	9.8		
1	401.53	5695	61815	1.70	401.83	393	17	13.4	2.50E+00	RN-219
1	404.87	5231	74470	1.89	405.17	393	17	16.9		PB-211
0	427.17	3140	67570	2.04	427.47	425	6	26.5		
0	445.07	1339	52029	1.29	445.37	443	6	54.2		
0	454.46	4616	58457	2.03	454.76	452	7	17.6		
0	461.53	3165	48283	1.98	461.83	460	6	22.3		
0	468.06	1015	55332	1.89	468.36	467	7	77.1		
0	473.39	984	45606	1.95	473.68	473	6	69.0		
0	480.22	5747	50878	2.00	480.51	478	7	13.3		
0	487.00	6309	49767	1.78	487.30	484	7	12.0		
0	510.61*	8077	56305	3.44	510.91	507	9	10.8		
0	533.25	2219	31134	1.75	533.55	531	5	24.2		
0	543.06	1285	35723	2.17	543.36	541	6	46.8		
0	573.01	1054	33533	1.81	573.30	571	6	55.3		
0	580.13	4867	37821	1.88	580.43	577	7	13.6		
2	604.60	927	20803	1.49	604.89	603	17	44.1	2.90E+03	
2	609.08*	618423	30278	2.10	609.38	603	17	0.3		BI-214
0	632.16	1022	25606	3.67	632.45	630	6	49.9		
0	639.21	504	29218	2.21	639.51	637	7	113.0		
0	648.55	431	24595	1.11	648.84	647	6	115.6		
0	665.30	17609	31855	2.12	665.59	663	8	3.8		
0	683.05	932	23052	1.93	683.34	681	6	51.9		
0	703.01*	5272	26916	1.72	703.30	700	7	10.7		
0	719.99	4308	32766	1.90	720.28	716	9	15.5		
0	733.59	515	20835	2.79	733.88	731	6	89.2		
0	742.13	3416	24955	2.44	742.41	739	7	15.7		
0	752.82	1564	20575	2.29	753.11	751	6	29.4		
0	768.14	56963	39690	2.14	768.42	763	11	1.6		
0	785.87	13245	34669	2.00	786.15	782	10	5.5		
0	806.01	12679	34761	2.00	806.29	802	10	5.8		
2	821.07	1842	24015	2.29	821.36	818	18	28.3	8.39E-01	
2	825.75*	1912	24122	2.34	826.03	818	18	27.4		
2	831.79	1843	20776	2.10	832.08	818	18	25.1		PB-211
0	838.80	6666	31472	1.95	839.08	835	9	9.9		
0	904.68	709	21792	2.22	904.96	903	6	66.3		
0	915.45	516	19622	3.15	915.73	914	6	86.3		
0	933.98	29617	34910	2.04	934.26	929	11	2.7		
0	948.91	432	17946	3.55	949.19	947	6	98.6		
0	964.06	3583	26526	2.20	964.34	960	9	16.7		
0	1000.80*	3785	24356	2.29	1001.07	997	9	15.2		PA-234M
0	1013.14	378	15817	2.01	1013.41	1011	6	105.8		
0	1032.27	923	17023	2.22	1032.54	1030	7	47.4		
0	1051.91	2710	21111	2.10	1052.18	1048	9	19.7		
0	1069.45	2365	21045	2.20	1069.73	1066	9	22.5		
0	1103.97	1045	13708	2.75	1104.24	1102	6	36.0		
3	1120.19*	126816	15587	2.36	1120.46	1114	24	0.6	1.73E+02	BI-214
3	1133.33	2074	15887	2.35	1133.60	1114	24	20.6		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1155.19	13746	24073	2.26	1155.46	1151	11	4.7		
0	1173.13	388	12179	2.73	1173.40	1171	6	90.7		
0	1181.92	2167	17996	2.34	1182.19	1178	9	22.7		
0	1207.50	3200	16464	2.27	1207.77	1204	9	14.9		
0	1238.15*	45846	22530	2.25	1238.42	1233	12	1.6		
0	1253.49	2913	17462	3.38	1253.76	1249	10	17.4		
0	1280.97	10824	17211	2.25	1281.24	1277	10	4.9		
0	1303.78	773	11017	2.18	1304.04	1301	7	45.6		
0	1317.16	678	9142	3.34	1317.42	1315	6	45.3		
2	1377.63	32048	12607	2.52	1377.89	1372	20	1.7	2.33E+01	
2	1385.28	5890	12927	2.55	1385.54	1372	20	7.2		
3	1401.45	9448	12703	2.52	1401.70	1397	18	4.6	7.88E+00	
3	1407.88	16476	11420	2.46	1408.14	1397	18	2.7		
0	1425.46	733	11068	2.30	1425.71	1423	7	48.2		
0	1460.57*	543	11121	2.41	1460.83	1458	7	65.0		K-40
0	1480.07*	404	11481	1.78	1480.33	1477	7	88.4		
0	1509.32	14666	22623	2.46	1509.57	1504	13	4.5		
3	1538.47	2929	10927	2.42	1538.72	1534	14	12.3	2.19E+00	
3	1543.26	3095	10076	2.40	1543.51	1534	14	11.6		
0	1583.20	4403	10679	2.46	1583.45	1579	9	9.0		
3	1594.68	1627	6679	2.14	1594.93	1591	13	16.7	5.44E-01	
3	1599.22	2031	7745	2.39	1599.47	1591	13	15.2		
0	1607.72	489	7312	2.95	1607.96	1605	7	58.8		
0	1661.35	7190	10352	2.64	1661.59	1654	15	6.6		
5	1684.18	1382	4673	2.70	1684.43	1678	21	17.9	1.51E+00	
5	1692.98	2087	6381	3.71	1693.22	1678	21	15.5		
0	1729.76	20936	7204	2.52	1730.00	1724	13	2.2		
0	1764.68*	100103	8915	2.56	1764.92	1758	14	0.7		BI-214
0	1782.26	210	2605	2.22	1782.49	1780	6	78.2		
2	1838.38	1958	3533	2.85	1838.61	1834	23	11.8	1.56E+01	
2	1847.54	13878	3095	2.82	1847.78	1834	23	2.2		
0	1873.23	1275	4375	2.49	1873.46	1868	11	20.9		
3	1890.24	699	3511	3.16	1890.47	1886	17	31.6	2.60E+00	
3	1896.36	981	3543	3.16	1896.59	1886	17	23.0		
0	1936.85	1027	3907	3.60	1937.08	1932	10	23.6		
0	1994.31	181	2149	2.82	1994.54	1991	8	90.0		
5	2010.69	505	2044	3.22	2010.92	2007	19	32.0	2.23E+00	
5	2017.76	510	2977	3.88	2017.99	2007	19	44.4		
0	2053.09*	225	1557	2.39	2053.31	2050	7	59.7		
0	2089.10	340	1976	2.38	2089.33	2083	12	53.4		
6	2110.17	546	1229	2.91	2110.39	2104	24	24.7	2.34E+00	
6	2118.70	6555	1229	2.84	2118.92	2104	24	3.2		
6	2123.08	290	1229	3.01	2123.30	2104	24	63.6		
0	2147.18	101	881	1.55	2147.40	2145	7	99.7		
0	2172.28	93	831	3.82	2172.50	2169		7105.1		
0	2193.54	129	1369	2.72	2193.76	2187	10	108.3		
0	2204.45*	26155	2272	2.78	2204.67	2198	15	1.5		BI-214
0	2266.17	86	555	4.81	2266.38	2263	8	97.9		
0	2293.64	1580	653	3.02	2293.86	2289	12	8.2		
0	2332.10	119	366	3.22	2332.31	2327	11	65.7		
0	2379.89	88	400	16.26	2380.10	2372		21116.6		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	2448.07	7373	446	2.89	2448.28	2441	15	2.6		
0	2483.66	93	98	3.12	2483.87	2479	10	44.9		
0	2507.61	52	162	3.14	2507.81	2502	12	106.4		
0	2592.12*	20	29	3.32	2592.32	2589	8	105.5		
0	2614.02	40	58	1.73	2614.22	2609	10	77.0		
0	2632.80	43	93	9.74	2632.99	2621	18	111.2		
0	2695.36	147	90	2.91	2695.55	2690	14	31.8		
0	2728.50	46	26	3.32	2728.70	2725	8	48.2		
0	2771.06	131	42	2.58	2771.26	2764	14	27.2		
0	2785.64	42	28	1.63	2785.83	2781	10	55.5		
0	2814.69	19	15	1.63	2814.88	2811	9	89.4		
0	2880.61	55	18	2.27	2880.79	2875	12	40.6		
0	2894.10	40	8	1.80	2894.28	2890	10	41.0		
0	2922.84	58	21	4.74	2923.03	2918	16	43.6		
0	2972.12	7	1	1.98	2972.30	2969	6	97.6		
0	2979.32	73	0	2.74	2979.51	2975	11	23.4		
0	2989.20	11	1	2.89	2989.39	2987	6	69.4		
0	3000.90	30	21	2.83	3001.09	2996	13	70.6		
0	3015.39	7	4	1.75	3015.57	3012	8	124.5		
0	3025.22	5	0	1.24	3025.40	3022	6	89.4		
0	3054.61	78	16	2.39	3054.79	3049	13	31.0		
0	3082.43	28	0	4.07	3082.61	3077	12	37.8		
0	3145.75	9	7	5.97	3145.93	3136	13	132.6		

Total number of lines in spectrum 157
Number of unidentified lines 105
Number of lines tentatively identified by NID 52 33.12%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.862E+01	1.862E+01	1.225E+01	65.83	
PB-210	22.26Y	1.00	1.050E+03	1.052E+03	0.098E+03	9.35	
PB-211	3.28E+04Y	1.00	1.790E+02	1.790E+02	0.294E+02	16.45	
BI-214	1602.00Y	1.00	2.498E+03	2.498E+03	0.137E+03	5.50	
PB-214	1602.00Y	1.00	2.407E+03	2.407E+03	0.268E+03	11.11	
RN-219	3.28E+04Y	1.00	1.038E+02	1.038E+02	0.174E+02	16.72	
RA-223	3.28E+04Y	1.00	1.157E+02	1.157E+02	0.312E+02	26.98	
RA-224	1.41E+10Y	1.00	4.760E+03	4.760E+03	0.745E+03	15.65	
RA-226	1602.00Y	1.00	3.839E+03	3.839E+03	7.037E+03	183.28	
TH-227	3.28E+04Y	1.00	1.043E+02	1.043E+02	0.138E+02	13.24	
PA-234M	4.47E+09Y	1.00	1.107E+03	1.107E+03	0.212E+03	19.16	
TH-234	4.47E+09Y	1.00	5.276E+02	5.276E+02	0.547E+02	10.37	
U-235	7.04E+08Y	1.00	6.422E+01	6.422E+01	1.169E+01	18.20	
Total Activity :			1.677E+04	1.678E+04			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.08	9.411E-01	1.015E+00	0.100E+01	98.53	
CD-109	464.00D	1.05	8.513E+02	8.897E+02	1.147E+02	12.89	
SN-126	1.00E+05Y	1.00	8.555E+01	8.555E+01	0.976E+01	11.40	
NP-237	2.14E+06Y	1.00	2.510E+02	2.510E+02	0.283E+02	11.29	
Total Activity :			1.189E+03	1.227E+03			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-230	7.70E+04Y	1.00	2.926E+03	2.926E+03	0.297E+03	10.15	
AM-243	7380.00Y	1.00	1.786E+02	1.786E+02	0.172E+02	9.65	
Total Activity :			3.104E+03	3.104E+03			

Grand Total Activity : 2.107E+04 2.111E+04

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma		%Error	Status
				pCi/GRAM	pCi/GRAM		
K-40	1460.81	10.67*	3.586E-01	1.862E+01	1.862E+01	65.83	OK
Final Mean for 1 Valid Peaks = 1.862E+01+/- 1.225E+01 (65.83%)							
PB-210	46.50	4.25*	2.278E+00	1.050E+03	1.052E+03	9.35	OK
Final Mean for 1 Valid Peaks = 1.052E+03+/- 9.839E+01 (9.35%)							
PB-211	404.84	2.90*	1.101E+00	2.151E+02	2.151E+02	19.69	OK
	831.96	2.90	5.742E-01	1.452E+02	1.453E+02	28.20	OK
Final Mean for 2 Valid Peaks = 1.790E+02+/- 2.945E+01 (16.45%)							
BI-214	609.31	46.30*	7.618E-01	2.301E+03	2.301E+03	12.59	OK
	1120.29	15.10	4.433E-01	2.487E+03	2.487E+03	10.37	OK
	1764.49	15.80	3.132E-01	2.656E+03	2.656E+03	10.24	OK
	2204.22	4.98	2.726E-01	2.529E+03	2.529E+03	11.21	OK
Final Mean for 4 Valid Peaks = 2.498E+03+/- 1.375E+02 (5.50%)							
PB-214	295.21	19.19	1.434E+00	2.438E+03	2.438E+03	18.34	OK
	351.92	37.19*	1.241E+00	2.390E+03	2.390E+03	13.97	OK
Final Mean for 2 Valid Peaks = 2.407E+03+/- 2.675E+02 (11.11%)							
RN-219	401.80	6.50*	1.108E+00	1.038E+02	1.038E+02	16.72	OK
Final Mean for 1 Valid Peaks = 1.038E+02+/- 1.736E+01 (16.72%)							
RA-223	323.87	3.88*	1.330E+00	1.157E+02	1.157E+02	26.98	OK
Final Mean for 1 Valid Peaks = 1.157E+02+/- 3.123E+01 (26.98%)							
RA-224	240.98	3.95*	1.672E+00	4.760E+03	4.760E+03	15.65	OK
Final Mean for 1 Valid Peaks = 4.760E+03+/- 7.449E+02 (15.65%)							
RA-226	186.21	3.28*	1.984E+00	3.839E+03	3.839E+03	183.28	OK
Final Mean for 1 Valid Peaks = 3.839E+03+/- 7.037E+03 (183.28%)							
TH-227	50.10	8.40	2.364E+00	4.315E+01	4.315E+01	15.02	<<WM Interf
	236.00	11.50*	1.698E+00	1.037E+02	1.037E+02	16.88	OK
	256.20	6.30	1.599E+00	1.054E+02	1.054E+02	21.31	OK
Final Mean for 2 Valid Peaks = 1.043E+02+/- 1.381E+01 (13.24%)							
PA-234M	1001.03	0.92*	4.879E-01	1.107E+03	1.107E+03	19.16	OK
Final Mean for 1 Valid Peaks = 1.107E+03+/- 2.121E+02 (19.16%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.556E+00	5.276E+02	5.276E+02	10.37	OK

Final Mean for 1 Valid Peaks = 5.276E+02+/- 5.469E+01 (10.37%)

U-235	143.76	10.50*	2.274E+00	7.327E+01	7.327E+01	22.95	OK
	163.35	4.70	2.136E+00	4.985E+01	4.985E+01	42.35	OK
	205.31	4.70	1.866E+00	6.436E+01	6.436E+01	39.62	OK

Final Mean for 3 Valid Peaks = 6.422E+01+/- 1.169E+01 (18.20%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
CO-57	122.06	85.51*	2.427E+00	9.411E-01	1.015E+00	98.53	OK
	136.48	10.60	2.326E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 1.015E+00+/- 9.999E-01 (98.53%)

CD-109	88.03	3.72*	2.606E+00	8.513E+02	8.897E+02	12.89	OK
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Final Mean for 1 Valid Peaks = 8.897E+02+/- 1.147E+02 (12.89%)

SN-126	87.57	37.00*	2.607E+00	8.555E+01	8.555E+01	11.40	OK
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Final Mean for 1 Valid Peaks = 8.555E+01+/- 9.756E+00 (11.40%)

NP-237	86.50	12.60*	2.610E+00	2.510E+02	2.510E+02	11.29	OK
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Final Mean for 1 Valid Peaks = 2.510E+02+/- 2.834E+01 (11.29%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
TH-230	48.44	16.90	2.327E+00	2.179E+01	2.179E+01	15.23	<<WM Interf
	62.85	4.60	2.552E+00	4.365E+02	4.365E+02	10.34	<<WM Interf
	67.67	0.37*	2.587E+00	2.926E+03	2.926E+03	10.15	OK

Final Mean for 1 Valid Peaks = 2.926E+03+/- 2.970E+02 (10.15%)

AM-243	74.67	66.00*	2.614E+00	1.786E+02	1.786E+02	9.65	OK
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Final Mean for 1 Valid Peaks = 1.786E+02+/- 1.724E+01 (9.65%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.862E+01	1.225E+01	1.654E+01	1.623E+00	1.126
CO-57	1.015E+00	9.999E-01	1.443E+00	1.629E-01	0.703
CD-109	8.897E+02	1.147E+02	3.860E+01	4.560E+00	23.047
SN-126	8.555E+01	9.756E+00	3.711E+00	3.775E-01	23.053
PB-210	1.052E+03	9.839E+01	2.710E+01	2.204E+00	38.833
PB-211	1.790E+02	2.945E+01	4.848E+01	4.493E+00	3.692
BI-214	2.498E+03	1.375E+02	2.859E+00	3.414E-01	873.680
PB-214	2.407E+03	2.675E+02	3.523E+00	4.715E-01	683.240
RN-219	1.038E+02	1.736E+01	2.147E+01	1.980E+00	4.834
RA-223	1.157E+02	3.123E+01	3.306E+01	5.242E+00	3.501
RA-224	4.760E+03	7.449E+02	3.283E+01	4.964E+00	144.968
RA-226	3.839E+03	7.037E+03	4.092E+01	7.499E+01	93.814
TH-227	1.043E+02	1.381E+01	1.109E+01	1.627E+00	9.404
TH-230	2.926E+03	2.970E+02	3.868E+02	3.117E+01	7.564
PA-234M	1.107E+03	2.121E+02	1.756E+02	1.918E+01	6.303
TH-234	5.276E+02	5.469E+01	3.551E+01	2.723E+00	14.858
U-235	6.422E+01	1.169E+01	1.214E+01	2.235E+00	5.289
NP-237	2.510E+02	2.834E+01	1.164E+01	1.169E+00	21.568
AM-243	1.786E+02	1.724E+01	2.156E+00	1.884E-01	82.835

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	7.586E+01		1.701E+01	1.869E+01	1.929E+00	4.058
NA-22	6.872E-01		1.154E+00	1.675E+00	1.547E-01	0.410
AL-26	-3.677E-01		6.496E-01	1.104E+00	1.029E-01	-0.333
TI-44	1.147E+01	+	1.166E+00	1.503E+00	1.214E-01	7.635
SC-46	-2.949E-01		1.291E+00	2.131E+00	2.509E-01	-0.138
V-48	9.169E-02		3.558E+00	5.854E+00	6.488E-01	0.016
CR-51	3.635E+00		2.174E+01	2.717E+01	4.456E+00	0.134
MN-54	5.543E+00		1.559E+00	1.699E+00	2.064E-01	3.263
CO-56	3.298E-01		1.361E+00	2.021E+00	2.442E-01	0.163
CO-58	1.634E+00		1.371E+00	2.032E+00	2.497E-01	0.804
FE-59	1.251E+00		3.118E+00	4.562E+00	4.765E-01	0.274
CO-60	1.205E+00	+	1.099E+00	1.673E+00	1.468E-01	0.720
ZN-65	5.233E+01		6.074E+00	4.430E+00	4.261E-01	11.812
SE-75	-2.114E+00		2.025E+00	2.499E+00	4.347E-01	-0.846
RB-82	-4.583E+01		2.201E+01	2.450E+01	3.040E+00	-1.871
RB-83	-1.241E+00		2.169E+00	3.487E+00	5.924E-01	-0.356
KR-85	9.293E+02		2.214E+02	3.021E+02	3.263E+01	3.077
SR-85	5.540E+00		1.320E+00	1.801E+00	1.945E-01	3.077
Y-88	7.895E+00		1.257E+00	1.640E+00	1.520E-01	4.815
NB-93M	2.360E+02		7.022E+01	3.840E+01	1.071E+01	6.144
NB-94	4.057E-01		9.781E-01	1.620E+00	1.930E-01	0.250
NB-95	1.531E+02		2.013E+01	4.362E+00	5.428E-01	35.107
ZR-95	1.972E+00		2.513E+00	3.434E+00	4.492E-01	0.574
RU-103	-1.150E+00		1.410E+00	2.366E+00	3.652E-01	-0.486

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RU-106	1.002E+01		9.400E+00	1.407E+01	2.223E+00	0.713
AG-108M	4.279E+00		1.152E+00	1.546E+00	1.935E-01	2.767
AG-110M	4.201E-02		1.099E+00	1.515E+00	1.884E-01	0.028
SN-113	3.953E+00		2.062E+00	2.525E+00	2.354E-01	1.566
TE123M	6.187E-01		1.434E+00	1.850E+00	1.772E-01	0.334
SB-124	3.981E-01		1.297E+00	1.963E+00	2.329E-01	0.203
I-125	-7.238E+01		1.873E+01	2.588E+01	2.540E+00	-2.797
SB-125	1.368E+01	+	3.903E+00	5.002E+00	4.883E-01	2.734
SB-126	8.359E+01	+	1.695E+01	1.435E+01	1.796E+00	5.823
SB-127	1.287E+03		5.281E+02	7.634E+02	9.548E+01	1.686
I-129	5.737E+00		1.910E+00	2.428E+00	2.825E-01	2.363
I-131	-4.228E-01		1.296E+01	2.006E+01	2.433E+00	-0.021
BA-133	8.490E+01	+	1.474E+01	3.009E+00	4.931E-01	28.216
CS-134	1.671E+00	+	7.665E-01	1.861E+00	2.215E-01	0.898
CS-135	1.072E+02		2.030E+01	8.689E+00	1.540E+00	12.339
CS-136	9.846E+00		6.557E+00	9.575E+00	1.020E+00	1.028
CS-137	6.812E+00		1.377E+00	1.637E+00	2.044E-01	4.161
LA-138	3.149E-01		1.618E+00	2.610E+00	2.501E-01	0.121
CE-139	4.277E+00		1.331E+00	1.864E+00	1.718E-01	2.294
BA-140	1.905E+01		2.229E+01	2.602E+01	8.814E+00	0.732
LA-140	5.589E+01		8.542E+00	9.747E+00	9.340E-01	5.735
CE-141	1.336E+01		4.786E+00	5.062E+00	1.258E+00	2.640
CE-144	-1.398E+01		7.622E+00	1.192E+01	1.285E+00	-1.173
PM-144	-9.475E-02		9.419E-01	1.413E+00	1.769E-01	-0.067
PM-145	-1.465E+01		1.022E+01	5.411E+00	3.528E+00	-2.709
PM-146	1.540E+01	+	3.183E+00	3.429E+00	3.425E-01	4.492
ND-147	1.291E+02		4.468E+01	6.493E+01	7.156E+00	1.988
EU-152	3.941E+02	+	4.974E+01	1.847E+01	2.156E+00	21.334
GD-153	-2.771E+00		3.589E+00	5.325E+00	5.646E-01	-0.520
EU-154	1.946E+00		3.199E+00	4.643E+00	4.290E-01	0.419
EU-155	1.035E+02	+	1.169E+01	5.064E+00	5.087E-01	20.441
EU-156	1.248E+01		4.078E+01	5.540E+01	1.355E+01	0.225
HO-166M	-2.581E+00		1.867E+00	2.490E+00	3.117E-01	-1.036
HF-172	-2.265E+00		7.160E+00	1.060E+01	1.179E+00	-0.214
LU-172	2.791E+01		3.346E+01	5.480E+01	5.423E+00	0.509
LU-173	1.069E+02		2.028E+01	6.976E+00	1.263E+00	15.331
HF-175	-5.655E-01		1.714E+00	2.127E+00	3.016E-01	-0.266
LU-176	-2.438E+00		1.174E+00	1.355E+00	2.320E-01	-1.800
TA-182	1.287E+03	+	1.333E+02	1.774E+01	1.691E+00	72.564
IR-192	3.774E+00	+	2.937E+00	3.591E+00	3.658E-01	1.051
HG-203	-6.078E-01		2.062E+00	2.586E+00	4.900E-01	-0.235
BI-207	1.509E+00		9.163E-01	1.373E+00	1.578E-01	1.099
TL-208	1.187E+01		3.250E+00	4.490E+00	5.230E-01	2.643
BI-210M	6.426E+00		2.490E+00	2.833E+00	4.845E-01	2.268
BI-212	-4.545E+00		9.674E+00	1.142E+01	1.428E+00	-0.398
PB-212	8.115E+01		1.268E+01	3.376E+00	5.032E-01	24.036
RA-225	6.702E+00		9.595E+00	1.463E+01	1.307E+00	0.458
AC-228	7.174E-01		5.165E+00	6.039E+00	7.021E-01	0.119

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-231	3.627E+02		7.580E+01	5.817E+01	1.013E+01	6.234
TH-231	2.686E+01	+	1.129E+01	1.122E+01	1.557E+00	2.394
PA-233	4.196E+00		5.062E+00	7.088E+00	1.890E+00	0.592
PA-234	-2.473E+00		3.641E+00	5.819E+00	6.335E-01	-0.425
AM-241	5.396E+01		5.086E+00	3.667E+00	2.698E-01	14.717
CM-243	3.125E+00		6.422E+00	9.220E+00	1.722E+00	0.339

Total number of lines in spectrum 157
Number of unidentified lines 105
Number of lines tentatively identified by NID 52 33.12%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.862E+01	1.862E+01	1.225E+01	65.83	
PB-210	22.26Y	1.00	1.050E+03	1.052E+03	0.098E+03	9.35	
PB-211	3.28E+04Y	1.00	1.790E+02	1.790E+02	0.294E+02	16.45	
BI-214	1602.00Y	1.00	2.498E+03	2.498E+03	0.137E+03	5.50	
PB-214	1602.00Y	1.00	2.407E+03	2.407E+03	0.268E+03	11.11	
RN-219	3.28E+04Y	1.00	1.038E+02	1.038E+02	0.174E+02	16.72	
RA-223	3.28E+04Y	1.00	1.157E+02	1.157E+02	0.312E+02	26.98	
RA-224	1.41E+10Y	1.00	4.760E+03	4.760E+03	0.745E+03	15.65	
RA-226	1602.00Y	1.00	3.839E+03	3.839E+03	7.037E+03	183.28	
TH-227	3.28E+04Y	1.00	1.043E+02	1.043E+02	0.138E+02	13.24	
PA-234M	4.47E+09Y	1.00	1.107E+03	1.107E+03	0.212E+03	19.16	
TH-234	4.47E+09Y	1.00	5.276E+02	5.276E+02	0.547E+02	10.37	
U-235	7.04E+08Y	1.00	6.422E+01	6.422E+01	1.169E+01	18.20	
Total Activity :			1.677E+04	1.678E+04			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.08	9.411E-01	1.015E+00	0.100E+01	98.53	
CD-109	464.00D	1.05	8.513E+02	8.897E+02	1.147E+02	12.89	
SN-126	1.00E+05Y	1.00	8.555E+01	8.555E+01	0.976E+01	11.40	
NP-237	2.14E+06Y	1.00	2.510E+02	2.510E+02	0.283E+02	11.29	
Total Activity :			1.189E+03	1.227E+03			

Nuclide Type : ACTIVATION

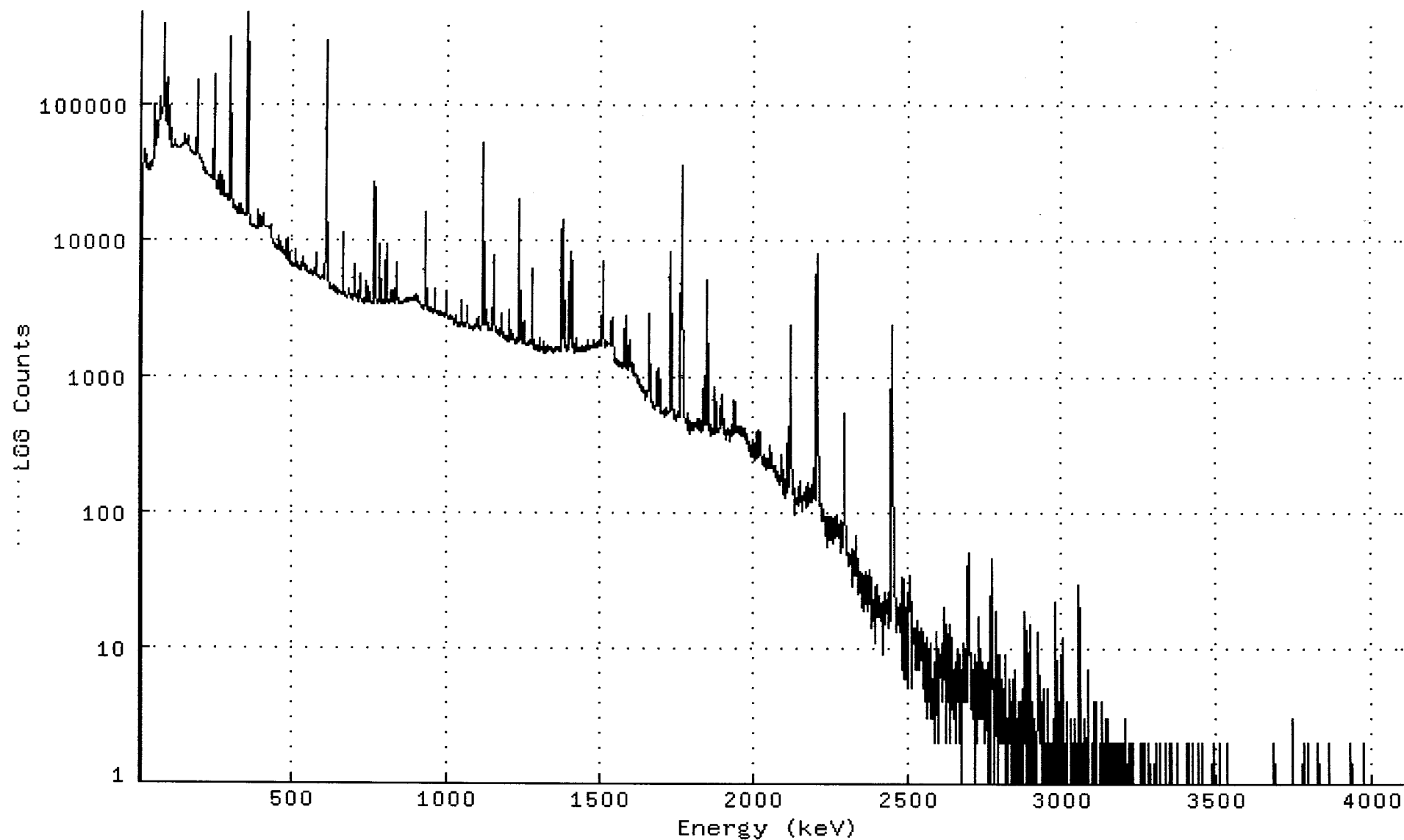
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-230	7.70E+04Y	1.00	2.926E+03	2.926E+03	0.297E+03	10.15	
AM-243	7380.00Y	1.00	1.786E+02	1.786E+02	0.172E+02	9.65	
Total Activity :			3.104E+03	3.104E+03			

Grand Total Activity : 2.107E+04 2.111E+04

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301306_GE3_GAS1202_190116.CNF;1
Title :
Sample Title: MQZ-51-130303
Start Time: 1-APR-2013 11:05: Sample Time: 3-MAR-2013 00:00: Energy Offset: -3.21163E-01
Real Time : 0 01:26:27.82 Sample ID : 1303013-06 Energy Slope : 1.00005E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301306_GE3_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	56
9:	12590	35489	36937	40527	43037	39455	45201	43971
17:	39196	37339	36210	34614	33225	32969	32146	32387
25:	32830	32921	35152	33169	32081	32416	33724	36174
33:	33478	33226	33668	35723	34841	34749	35834	37609
41:	38057	39498	41425	43029	48729	98146	77966	49627
49:	49430	55762	51479	56178	74324	59953	55114	56314
57:	59124	62651	68599	72655	75802	82849	112775	91291
65:	81291	80614	90778	90520	84037	84435	86416	88102
73:	95171	183025	239303	201809	388819	167347	115114	92619
81:	95246	72626	86805	97924	70456	88689	153688	100922
89:	85887	93344	68715	95941	92012	74364	68689	53633
97:	54182	65151	57960	50057	47663	47652	47301	47378
105:	47561	47134	47748	47768	49381	50979	52771	51565
113:	51939	50206	49080	47994	47185	47082	46442	46593
121:	47284	48010	47313	47019	47447	47464	47531	47805
129:	47641	47666	47929	47779	47638	47453	48014	48405
137:	48587	49316	49420	50005	50090	49679	53677	58935
145:	52208	49528	49616	50720	51023	51283	51691	51177
153:	52490	57296	52865	50411	49635	49015	48601	46893
161:	46462	45850	47208	45846	44601	44116	43589	43403
169:	42939	42881	42479	42292	41633	41941	41813	41684
177:	41639	41240	41482	42033	42158	42464	42535	43065
185:	73286	148703	83451	49260	43679	42835	41030	39861
193:	39869	39161	39236	40160	38579	38042	37822	37301
201:	37035	36900	35336	35312	36370	35058	33505	32602
209:	32406	33070	32889	32241	31673	31274	30589	30727
217:	30821	30162	30337	29994	29990	29612	29689	29493
225:	29227	29257	28967	28637	28456	28503	28312	28220
233:	27947	27952	31341	36890	29599	27625	27428	28326
241:	74874	163441	68932	33906	29088	27918	25699	24905
249:	24376	24235	23337	23576	23199	23407	24135	27546
257:	25101	27048	30709	24599	22283	22251	22032	21606
265:	21313	21184	21124	22376	29418	29098	29407	24716
273:	22952	25449	25932	21686	20610	20305	20303	20480
281:	21011	20485	20895	21185	20581	21220	20164	19615
289:	19797	19580	19376	19735	20818	78226	303734	160533
297:	46166	28600	27411	25718	20535	19720	19282	18473
305:	18135	16995	16796	16873	16427	16350	16534	16554
313:	16955	17332	16777	16103	16035	15853	16056	15761
321:	15633	15697	16811	18229	16232	15714	15463	15643
329:	16663	17880	16002	15571	16238	16606	16083	15248
337:	15587	16437	15806	15482	15327	15506	15155	15153
345:	15114	15260	15162	15797	16999	27360	220744	481908
353:	163823	46508	30105	26598	19673	16196	14553	13510
361:	13083	13005	12818	12609	12624	12417	12378	12427
369:	12415	12484	12354	12773	12304	12249	12257	12268
377:	12212	12312	12191	12130	12382	12044	12309	12150
385:	12336	13727	15010	14662	16339	13633	12458	12214
393:	12286	12224	12499	12591	12452	12476	12430	12336
401:	13899	15518	13355	13403	15134	14157	12801	12670
409:	12443	12498	12503	12523	12455	12458	12196	12356
417:	12490	12419	12492	12305	12488	12278	12160	12326
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457:	8318	8202	8194	8387	9027	9588	8601	7928
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1145:	2213	2178	2185	2189	2158	2156	2195	2173
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1185:	2039	2020	1976	1989	1907	1886	1926	1958
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1217:	1878	1990	1953	1875	1808	1847	1862	1725
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1577:	1167	1185	1199	1207	1261	1793	2762	2683
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1617:	1006	988	989	998	943	995	895	897
1625:	949	951	877	871	870	850	848	826
1633:	839	800	783	851	844	854	826	790
1641:	799	797	749	763	765	755	715	669
1649:	773	740	695	749	727	707	728	762
1657:	775	778	877	1621	2858	2900	1662	921
1665:	778	768	715	692	639	634	649	604
1673:	637	581	610	597	588	585	604	571
1681:	581	607	822	1062	982	694	652	599
1689:	636	602	762	979	1126	1059	864	678
1697:	639	580	576	529	530	547	546	523
1705:	543	533	573	501	517	537	503	528
1713:	520	524	576	528	512	546	511	522
1721:	522	534	541	542	533	549	757	2090
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1737:	557	564	542	491	492	486	538	524
1745:	511	512	502	502	469	513	519	544
1753:	500	527	547	519	507	516	491	524
1761:	635	1833	9380	28004	35930	19085	6129	2625
1769:	1801	1185	882	638	578	525	505	447
1777:	472	455	453	450	472	484	524	489
1785:	396	448	413	416	419	421	435	377
1793:	465	408	401	451	452	454	431	434
1801:	437	425	458	418	451	396	418	458
1809:	437	433	438	430	486	414	455	448
1817:	412	471	410	425	413	485	409	401
1825:	420	460	414	385	404	425	423	434
1833:	392	396	410	449	666	997	1017	713
1841:	484	448	432	440	655	1767	4315	5154
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1857:	392	398	431	421	395	363	415	389
1865:	411	380	407	372	424	377	471	573

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1881:	413	398	392	405	391	384	417	419
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1905:	383	338	378	380	378	374	393	396
1913:	411	393	370	393	417	386	394	398
1921:	394	374	375	331	405	368	440	410
1929:	422	362	408	374	389	416	521	662
1937:	642	590	504	436	400	381	404	405
1945:	430	388	420	396	387	406	384	412
1953:	370	379	428	398	404	427	359	402
1961:	375	394	390	400	388	408	367	400
1969:	393	394	358	406	372	317	377	346
1977:	314	375	328	318	330	291	312	317
1985:	290	280	306	292	272	289	255	286
1993:	293	340	322	307	274	253	279	294
2001:	319	251	241	287	268	273	247	301
2009:	304	347	380	395	280	258	278	312
2017:	388	385	330	306	274	300	273	236
2025:	250	232	225	248	230	263	247	263
2033:	244	260	218	247	219	236	248	238
2041:	241	207	233	226	240	209	244	220
2049:	238	208	241	259	313	305	245	212
2057:	232	233	225	218	219	218	215	195
2065:	195	197	211	216	200	207	193	177
2073:	179	182	197	182	197	174	171	167
2081:	185	175	158	180	182	190	167	210
2089:	217	267	223	191	172	159	167	165
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2873:	3	2	2	5	3	2	9	11
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3049:	1	2	1	6	8	22	29	14
3057:	4	4	1	1	1	1	1	0
3065:	1	2	1	1	2	0	3	2
3073:	1	0	1	0	0	2	0	1
3081:	5	6	3	7	2	1	1	0
3089:	0	0	0	0	1	2	0	2
3097:	1	2	0	1	2	4	1	0
3105:	1	4	0	0	2	0	0	0
3113:	1	0	1	1	1	1	1	1
3121:	1	2	2	1	2	0	1	4
3129:	0	0	1	1	2	0	2	0
3137:	1	0	1	0	3	2	3	1
3145:	2	2	1	0	0	0	0	0
3153:	1	2	1	1	2	0	0	1
3161:	1	1	2	0	0	1	0	2
3169:	0	2	2	1	0	0	0	2
3177:	0	1	0	0	0	1	2	0
3185:	2	2	2	1	0	1	0	1
3193:	1	2	1	0	0	1	0	1
3201:	3	0	1	1	0	0	1	0
3209:	0	0	2	2	0	1	0	2
3217:	0	0	2	0	1	0	0	1
3225:	2	0	0	0	0	1	0	0
3233:	0	0	0	1	0	0	0	0
3241:	0	0	1	1	0	0	0	0
3249:	1	0	0	2	1	0	2	1
3257:	0	0	1	0	1	0	2	2
3265:	0	0	0	0	1	1	0	0
3273:	1	1	2	0	0	2	0	0
3281:	1	0	1	0	0	0	0	0
3289:	1	0	0	0	1	0	0	1
3297:	1	2	0	1	0	0	1	1
3305:	0	0	0	0	1	0	2	0

3313:	1	1	1	0	1	1	1	0
3321:	0	0	1	1	0	1	1	0
3329:	0	2	0	1	0	1	1	0
3337:	1	1	0	1	0	0	0	0
3345:	0	0	2	0	0	2	0	0
3353:	0	1	0	0	0	1	0	0
3361:	0	1	0	1	1	0	2	2
3369:	1	0	1	1	0	0	0	1
3377:	0	1	0	0	0	0	0	0
3385:	0	1	0	0	1	0	0	1
3393:	0	1	0	1	0	1	1	0
3401:	1	0	2	0	0	2	0	1
3409:	1	0	0	0	1	0	0	0
3417:	1	0	2	0	1	0	0	0
3425:	0	0	0	1	0	0	0	0
3433:	1	0	0	0	0	2	0	1
3441:	0	0	0	0	0	0	0	2
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	1	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	0	0	0	0	0
3481:	0	0	0	2	0	0	0	0
3489:	0	0	1	0	0	0	0	0
3497:	0	0	0	0	1	1	0	1
3505:	0	0	2	0	0	0	1	0
3513:	0	1	0	1	0	0	0	1
3521:	1	1	0	0	1	0	1	0
3529:	2	0	2	0	0	0	0	0
3537:	0	0	1	0	0	0	0	0
3545:	1	0	1	0	0	0	0	0
3553:	1	0	0	0	0	0	0	0
3561:	0	1	1	0	0	1	0	0
3569:	0	0	0	1	0	1	0	0
3577:	0	1	0	1	0	0	0	0
3585:	0	0	0	0	0	0	0	0
3593:	1	0	0	0	0	1	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	1	1	0	0	0	1	0
3617:	0	0	0	0	0	0	0	0
3625:	1	0	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	1	0	0	0	0	0	0	0
3649:	0	1	0	0	0	0	0	0
3657:	1	1	0	0	0	0	1	0
3665:	1	0	0	0	0	0	0	0
3673:	0	1	0	0	0	0	0	0
3681:	0	2	0	0	0	1	1	0
3689:	0	0	0	0	0	1	0	0
3697:	0	0	0	0	0	0	0	0
3705:	1	0	0	0	0	0	1	0
3713:	0	0	0	0	0	1	0	0
3721:	1	0	0	0	0	0	0	0
3729:	0	1	1	0	0	0	0	0
3737:	0	0	0	0	0	3	0	0
3745:	0	1	0	0	0	0	0	0
3753:	1	0	0	0	0	0	0	0
3761:	0	0	0	1	0	0	0	0
3769:	1	0	1	0	0	1	0	2
3777:	0	0	0	0	0	0	0	0
3785:	0	0	1	0	0	2	0	0

3793:	0	0	0	0	1	0	1	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	1	0	0	0
3825:	2	0	0	1	0	0	1	0
3833:	0	0	0	1	0	0	0	0
3841:	0	0	0	1	0	0	0	0
3849:	1	0	0	0	0	1	0	0
3857:	0	0	0	0	2	0	0	0
3865:	0	0	0	0	0	0	1	0
3873:	0	0	0	0	0	0	0	1
3881:	0	0	0	0	0	1	0	0
3889:	0	0	0	0	1	0	0	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	1	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	2	1	0	0	0	0
3937:	0	0	0	0	0	1	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	1	0	0	0	0	0
3961:	0	0	0	0	0	1	1	0
3969:	1	0	0	2	0	0	0	0
3977:	0	0	0	1	0	0	1	0
3985:	0	0	0	0	1	0	0	0
3993:	0	0	0	1	0	0	1	0
4001:	0	0	0	0	1	0	0	0
4009:	1	0	1	1	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	1
4033:	0	1	0	0	0	0	0	1
4041:	1	0	0	0	1	0	1	0
4049:	0	0	0	0	0	1	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	1
4089:	0	1	0	0	0	0	0	0

Sample ID : 1303013-07

Acquisition date : 1-APR-2013 14:40:42

VAX/VMS Peak Search Report Generated 1-APR-2013 16:08:10.59

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301307_GE3_GAS1202_190136.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-51-2-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 14:40:42.
 Sample ID : 1303013-07 Sample Quantity : 5.69260E+02 gram
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE3 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:26:55.15 31%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	26.73	3457	232939	1.59	27.05	23	7	46.4		
0	31.50	5505	168148	1.40	31.82	30	5	22.5		
0	45.92*	71922	253699	1.75	46.24	45	5	2.2		PB-210
1	49.82	6041	104027	1.21	50.13	49	7	13.3	7.93E+01	TH-230 TH-227
1	52.82*	28681	221237	1.29	53.14	49	7	4.8		
0	62.56*	54870	502349	1.38	62.88	61	6	4.2		TH-230 TH-234
5	67.53	23081	420915	2.22	67.84	66	17	8.5	3.30E+04	TH-230
5	74.68*	241123	331465	1.39	75.00	66	17	0.8		AM-243
0	87.25	60460	450726	1.15	87.57	85	5	3.4		NP-237 SN-126 CD-109
0	93.02*	89661	405668	2.11	93.34	91	6	2.4		
0	98.11	29821	263388	1.76	98.43	97	5	5.3		
0	111.83	14825	308491	3.19	112.15	110	6	12.0		
0	121.58	2048	291241	1.74	121.90	120	6	83.4		CO-57
0	143.64*	16085	308222	1.49	143.95	142	6	11.0		U-235
0	153.97	12078	308442	1.67	154.28	152	6	14.7		
0	163.55	5679	230218	1.82	163.87	162	5	25.5		U-235
0	185.87*	196748	388391	1.55	186.18	182	9	1.2		RA-226
0	196.22*	3062	194622	1.77	196.53	195	5	43.4		
0	205.05	5307	209155	2.05	205.36	203	6	27.5		U-235
0	211.22	2048	194666	2.64	211.53	209	6	68.4		
1	235.67	14436	141192	1.67	235.98	232	16	7.9	3.07E+02	TH-227
1	241.76*	240070	135917	1.71	242.07	232	16	0.6		RA-224
3	255.95	6154	47793	1.42	256.26	255	8	8.9	8.70E+00	TH-227
3	258.60	15851	116887	1.82	258.91	255	8	6.7		
7	269.90	27569	150476	3.14	270.21	267	11	4.8	4.91E+01	
7	274.35	12361	127148	1.97	274.66	267	11	9.4		
0	285.74	1524	122967	1.20	286.04	284	6	73.1		
7	294.98*	513122	98080	1.74	295.29	291	13	0.3	9.23E+02	PB-214
7	298.69	29634	154595	2.64	299.00	291	13	6.6		
0	313.81	2751	98864	2.22	314.12	312	6	36.4		
0	323.81	4176	94716	1.79	324.12	322	6	23.5		RA-223
0	329.21	2262	79959	1.54	329.52	328	5	37.7		

AG
4/2/13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	333.54	1719	79317	1.71	333.85	332	5	49.4		
0	337.61*	1422	78403	1.75	337.92	337	5	59.3		
5	351.70*	868801	73572	1.83	352.01	346	15	0.2	1.18E+03	PB-214
5	354.67	52711	112268	2.71	354.97	346	15	4.2		
0	370.71	1098	74557	1.13	371.01	369	6	78.9		
0	377.23	657	61750	4.43	377.54	376		5113.7		
0	387.89	13096	124238	3.51	388.19	384	10	10.2		
2	401.48	4485	62857	1.52	401.78	399	10	17.0	1.65E+00	RN-219
2	404.97	5625	75706	1.88	405.27	399	10	15.8		PB-211
0	427.01	3522	68661	3.16	427.31	425	6	23.9		
0	444.89	1017	53122	1.64	445.19	443	6	72.1		
0	454.61	4372	50995	1.79	454.91	453	6	16.6		
0	461.72	3523	48826	2.10	462.02	460	6	20.1		
0	469.52*	1916	39390	1.75	469.82	468	5	31.4		
3	474.24	1170	39177	1.67	474.53	472	12	50.7	3.28E+00	
3	480.21	5848	37405	1.68	480.51	472	12	10.3		
0	486.82	6819	50339	2.03	487.11	484	7	11.2		
0	510.70*	8357	57827	3.86	511.00	507	9	10.6		
0	533.38	2056	37747	1.73	533.68	531	6	30.2		
0	542.97	1255	30415	2.13	543.27	542	5	42.1		
0	573.24	1249	33697	2.80	573.54	571	6	46.9		
0	579.88	5070	38190	1.91	580.17	577	7	13.1		
8	604.77	613	21079	1.33	605.06	603	17	66.7	5.45E+02	
8	609.13*	607399	30075	1.94	609.43	603	17	0.3		BI-214
8	612.58	36215	44071	2.97	612.87	603	17	4.9		
0	632.50	560	26377	1.64	632.79	631	6	92.2		
0	648.89	1022	24387	3.93	649.19	647	6	48.7		
0	665.41	16668	45919	2.11	665.70	660	11	5.2		
0	683.01	1087	23511	1.92	683.30	681	6	45.0		
0	703.10*	4977	27682	1.84	703.38	700	7	11.4		
0	719.92	4420	33096	1.74	720.20	716	9	15.1		
0	733.35	811	21235	2.19	733.64	731	6	57.3		
0	742.23	4273	32186	2.64	742.52	739	9	15.4		
0	752.69	1239	21283	2.26	752.98	751	6	37.7		
0	768.26	58592	47192	2.20	768.55	763	13	1.7		
0	786.01	13540	35182	1.96	786.30	782	10	5.5		
0	806.16	12658	31364	2.07	806.44	803	9	5.3		
0	820.51	1267	21337	1.66	820.79	819	6	36.9		
0	825.89*	1156	21159	2.24	826.17	824	6	40.2		
0	831.85	1726	21002	1.67	832.13	830	6	27.0		PB-211
0	838.97	7472	31407	2.11	839.25	836	9	8.9		
0	904.63	1159	25343	2.31	904.91	902	7	46.0		
0	934.02	29102	36023	2.06	934.30	929	11	2.8		
0	963.91	3344	23821	2.24	964.18	961	8	16.4		
0	1001.00*	3687	19787	2.13	1001.27	998	7	13.1		PA-234M
0	1032.70	657	14754	2.35	1032.97	1031	6	59.0		
0	1052.05	2921	18928	2.00	1052.32	1049	8	16.7		
0	1070.08	1988	19077	2.01	1070.35	1067	8	24.5		
0	1096.74	430	13608	1.34	1097.01	1095	6	86.3		
0	1104.12	1102	16111	2.30	1104.39	1101	7	38.7		
3	1120.24*	126536	16103	2.32	1120.50	1115	23	0.7	1.71E+02	BI-214

Sample ID : 1303013-07

Acquisition date : 1-APR-2013 14:40:42

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	1133.45	1812	16284	2.23	1133.72	1115	23	23.8		
0	1155.19	14083	22313	2.22	1155.45	1151	10	4.3		
0	1172.98	448	14294	1.75	1173.25	1171	7	89.1		
0	1182.26	2236	17878	2.44	1182.53	1179	9	22.0		
0	1207.74	3304	16784	1.95	1208.01	1204	9	14.6		
0	1218.83	447	12916	4.17	1219.09	1216	7	84.9		
0	1238.18*	46368	24492	2.28	1238.45	1232	13	1.7		
0	1253.50	2913	17642	3.16	1253.76	1249	10	17.5		
0	1281.12	11434	18455	2.29	1281.38	1277	11	5.0		
0	1304.06	690	11350	1.89	1304.32	1301	7	51.8		
0	1317.52	591	11096	2.27	1317.78	1315	7	59.7		
0	1336.03	317	11223	2.70	1336.29	1334	7	111.6		
4	1377.63	31453	11068	2.35	1377.89	1373	18	1.6	7.66E+00	
4	1381.52	1426	11251	2.41	1381.78	1373	18	32.5		
4	1385.26	5649	11340	2.25	1385.52	1373	18	6.9		
1	1401.52	9300	11092	2.42	1401.78	1397	20	4.3	7.76E+00	
1	1407.96	16407	11290	2.42	1408.21	1397	20	2.7		
0	1425.38	792	11179	3.05	1425.64	1423	7	44.8		
0	1460.28*	501	11488	3.80	1460.53	1458	7	71.5		K-40
0	1509.38	15134	22590	2.55	1509.63	1504	13	4.4		
3	1538.50	2885	12702	2.50	1538.75	1534	14	14.0	4.85E-01	
3	1543.30	3138	10321	2.48	1543.55	1534	14	11.6		
0	1563.49	260	8453	2.43	1563.74	1561	7	117.9		
0	1583.28	4387	11825	2.48	1583.53	1579	10	9.8		
3	1594.84	1756	7802	2.31	1595.09	1591	13	17.4	8.64E-01	
3	1599.20	1967	7735	2.32	1599.45	1591	13	15.7		
0	1607.82	357	6357	1.62	1608.07	1606	6	71.7		
0	1661.28	7016	9917	2.49	1661.52	1655	14	6.5		
0	1683.83	1201	5628	2.25	1684.08	1680	9	23.2		
0	1693.25	1993	6349	2.96	1693.49	1689	11	16.2		
0	1729.84	21468	7560	2.60	1730.08	1724	14	2.2		
0	1764.70*	100580	7964	2.57	1764.94	1760	12	0.7		BI-214
2	1838.51	2028	3324	2.74	1838.74	1834	22	10.8	9.71E+00	
2	1847.58	13498	3365	2.78	1847.81	1834	22	2.3		
0	1873.08	1309	4065	2.97	1873.32	1869	10	19.0		
6	1890.43	630	3177	2.68	1890.66	1886	17	32.0	1.13E+00	
6	1896.78	1081	4236	4.20	1897.01	1886	17	24.4		
0	1937.23	1242	4156	3.39	1937.46	1933	11	20.9		
0	1971.41	163	2578	3.10	1971.64	1968	7	104.4		
0	2010.63	398	2088	2.75	2010.85	2007	8	41.0		
0	2017.24	329	1979	1.81	2017.47	2015	7	46.1		
0	2052.75*	320	2040	2.28	2052.97	2049	9	52.2		
1	2086.02	122	484	2.19	2086.24	2085	11	48.4	6.73E+00	
1	2089.93	323	1231	2.68	2090.16	2085	11	39.8		
2	2109.94	413	1269	2.57	2110.17	2105	21	31.2	5.25E+00	
2	2118.74	6801	1365	2.95	2118.97	2105	21	3.1		
0	2147.97	156	1142	2.61	2148.20	2144	9	79.7		
0	2192.24	269	1017	2.04	2192.46	2189	8	42.8		
0	2204.45*	26991	2353	2.84	2204.67	2197	16	1.5		BI-214
0	2267.29	137	1055	1.95	2267.51	2261	14	102.5		
0	2293.97	1650	728	2.93	2294.18	2289	13	8.4		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	2330.88	118	275	3.88	2331.09	2327	9	54.0		
0	2410.79	35	122	2.86	2411.00	2408	8	115.4		
0	2448.08	7723	513	2.94	2448.29	2441	15	2.6		
0	2506.51	50	126	3.77	2506.72	2502	10	88.2		
0	2694.56	104	74	2.01	2694.75	2690	9	35.6		
0	2770.51	133	43	3.39	2770.70	2763	13	26.6		
0	2785.64	48	26	3.42	2785.83	2779	13	52.5		
0	2799.02	22	14	3.98	2799.21	2795	8	72.3		
0	2827.06	34	26	1.21	2827.25	2820	15	73.8		
0	2882.13	47	25	3.48	2882.32	2874	15	55.3		
0	2896.36	44	12	3.21	2896.55	2890	14	46.1		
0	2924.96	81	29	4.42	2925.14	2918	19	38.8		
0	2979.37	57	10	1.70	2979.56	2976	9	32.6		
0	3000.43	38	9	2.52	3000.61	2994	12	45.3		
0	3054.67	87	10	3.08	3054.85	3048	13	26.0		
0	3082.91	24	2	4.32	3083.09	3078	10	48.3		

Total number of lines in spectrum 150
Number of unidentified lines 98
Number of lines tentatively identified by NID 52 34.67%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr		Error	
			pCi/gram	pCi/gram		%Error	
K-40	1.28E+09Y	1.00	1.726E+01	1.726E+01	1.247E+01	72.27	
PB-210	22.26Y	1.00	9.796E+02	9.821E+02	0.916E+02	9.33	
PB-211	3.28E+04Y	1.00	1.814E+02	1.814E+02	0.298E+02	16.43	
BI-214	1602.00Y	1.00	2.518E+03	2.518E+03	0.139E+03	5.51	
PB-214	1602.00Y	1.00	2.474E+03	2.474E+03	0.275E+03	11.11	
RN-219	3.28E+04Y	1.00	8.214E+01	8.214E+01	1.625E+01	19.78	
RA-223	3.28E+04Y	1.00	1.067E+02	1.067E+02	0.306E+02	28.64	
RA-224	1.41E+10Y	1.00	4.793E+03	4.793E+03	0.750E+03	15.65	
RA-226	1602.00Y	1.00	3.988E+03	3.988E+03	7.309E+03	183.28	
TH-227	3.28E+04Y	1.00	8.839E+01	8.839E+01	1.136E+01	12.85	
PA-234M	4.47E+09Y	1.00	1.083E+03	1.083E+03	0.190E+03	17.51	
TH-234	4.47E+09Y	1.00	7.450E+02	7.450E+02	0.715E+02	9.60	
U-235	7.04E+08Y	1.00	8.246E+01	8.246E+01	1.327E+01	16.09	
Total Activity :			1.714E+04	1.714E+04			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr		Error	
			pCi/gram	pCi/gram		%Error	
CO-57	270.90D	1.08	1.302E+00	1.404E+00	1.183E+00	84.28	
CD-109	464.00D	1.05	8.224E+02	8.596E+02	1.112E+02	12.93	
SN-126	1.00E+05Y	1.00	8.265E+01	8.265E+01	0.947E+01	11.45	
NP-237	2.14E+06Y	1.00	2.425E+02	2.425E+02	0.275E+02	11.34	
Total Activity :			1.149E+03	1.186E+03			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr		Error	
			pCi/gram	pCi/gram		%Error	
TH-230	7.70E+04Y	1.00	3.180E+03	3.180E+03	0.394E+03	12.38	
AM-243	7380.00Y	1.00	1.844E+02	1.844E+02	0.178E+02	9.65	
Total Activity :			3.364E+03	3.364E+03			

Grand Total Activity : 2.165E+04 2.169E+04

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma		%Error	Status
				pCi/gram	pCi/gram		
K-40	1460.81	10.67*	3.586E-01	1.726E+01	1.726E+01	72.27	OK
Final Mean for 1 Valid Peaks = 1.726E+01+/- 1.247E+01 (72.27%)							
PB-210	46.50	4.25*	2.278E+00	9.796E+02	9.821E+02	9.33	OK
Final Mean for 1 Valid Peaks = 9.821E+02+/- 9.163E+01 (9.33%)							
PB-211	404.84	2.90*	1.101E+00	2.325E+02	2.325E+02	18.77	OK
	831.96	2.90	5.742E-01	1.367E+02	1.367E+02	29.88	OK
Final Mean for 2 Valid Peaks = 1.814E+02+/- 2.982E+01 (16.43%)							
BI-214	609.31	46.30*	7.618E-01	2.271E+03	2.271E+03	12.59	OK
	1120.29	15.10	4.433E-01	2.493E+03	2.493E+03	10.37	OK
	1764.49	15.80	3.132E-01	2.681E+03	2.681E+03	10.24	OK
	2204.22	4.98	2.726E-01	2.622E+03	2.622E+03	11.21	OK
Final Mean for 4 Valid Peaks = 2.518E+03+/- 1.386E+02 (5.51%)							
PB-214	295.21	19.19	1.434E+00	2.460E+03	2.460E+03	18.34	OK
	351.92	37.19*	1.241E+00	2.482E+03	2.482E+03	13.97	OK
Final Mean for 2 Valid Peaks = 2.474E+03+/- 2.749E+02 (11.11%)							
RN-219	401.80	6.50*	1.108E+00	8.214E+01	8.214E+01	19.78	OK
Final Mean for 1 Valid Peaks = 8.214E+01+/- 1.625E+01 (19.78%)							
RA-223	323.87	3.88*	1.330E+00	1.067E+02	1.067E+02	28.64	OK
Final Mean for 1 Valid Peaks = 1.067E+02+/- 3.056E+01 (28.64%)							
RA-224	240.98	3.95*	1.672E+00	4.793E+03	4.793E+03	15.65	OK
Final Mean for 1 Valid Peaks = 4.793E+03+/- 7.502E+02 (15.65%)							
RA-226	186.21	3.28*	1.984E+00	3.988E+03	3.988E+03	183.28	OK
Final Mean for 1 Valid Peaks = 3.988E+03+/- 7.309E+03 (183.28%)							
TH-227	50.10	8.40	2.364E+00	4.011E+01	4.011E+01	15.95	<<WM Interf
	236.00	11.50*	1.698E+00	9.753E+01	9.753E+01	17.14	OK
	256.20	6.30	1.599E+00	8.056E+01	8.056E+01	19.21	OK
Final Mean for 2 Valid Peaks = 8.839E+01+/- 1.136E+01 (12.85%)							
PA-234M	1001.03	0.92*	4.879E-01	1.083E+03	1.083E+03	17.51	OK
Final Mean for 1 Valid Peaks = 1.083E+03+/- 1.897E+02 (17.51%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.556E+00	7.450E+02	7.450E+02	9.60	OK

Final Mean for 1 Valid Peaks = 7.450E+02+/- 7.149E+01 (9.60%)

U-235	143.76	10.50*	2.274E+00	8.885E+01	8.885E+01	21.83	OK
	163.35	4.70	2.136E+00	7.460E+01	7.460E+01	32.32	OK
	205.31	4.70	1.866E+00	7.979E+01	7.979E+01	34.72	OK

Final Mean for 3 Valid Peaks = 8.246E+01+/- 1.327E+01 (16.09%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CO-57	122.06	85.51*	2.427E+00	1.302E+00	1.404E+00	84.28	OK
	136.48	10.60	2.326E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 1.404E+00+/- 1.183E+00 (84.28%)

CD-109	88.03	3.72*	2.606E+00	8.224E+02	8.596E+02	12.93	OK
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Final Mean for 1 Valid Peaks = 8.596E+02+/- 1.112E+02 (12.93%)

SN-126	87.57	37.00*	2.607E+00	8.265E+01	8.265E+01	11.45	OK
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Final Mean for 1 Valid Peaks = 8.265E+01+/- 9.467E+00 (11.45%)

NP-237	86.50	12.60*	2.610E+00	2.425E+02	2.425E+02	11.34	OK
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Final Mean for 1 Valid Peaks = 2.425E+02+/- 2.750E+01 (11.34%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
TH-230	48.44	16.90	2.327E+00	2.026E+01	2.026E+01	16.15	<<WM Interf
	62.85	4.60	2.552E+00	6.164E+02	6.164E+02	9.57	<<WM Interf
	67.67	0.37*	2.587E+00	3.180E+03	3.180E+03	12.38	OK

Final Mean for 1 Valid Peaks = 3.180E+03+/- 3.936E+02 (12.38%)

AM-243	74.67	66.00*	2.614E+00	1.844E+02	1.844E+02	9.65	OK
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Final Mean for 1 Valid Peaks = 1.844E+02+/- 1.779E+01 (9.65%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	1.726E+01	1.247E+01	1.676E+01	1.645E+00	1.030
CO-57	1.404E+00	1.183E+00	1.477E+00	1.667E-01	0.951
CD-109	8.596E+02	1.112E+02	3.971E+01	4.692E+00	21.646
SN-126	8.265E+01	9.467E+00	3.817E+00	3.883E-01	21.651
PB-210	9.821E+02	9.163E+01	2.779E+01	2.260E+00	35.337
PB-211	1.814E+02	2.982E+01	4.898E+01	4.539E+00	3.705
BI-214	2.518E+03	1.386E+02	2.892E+00	3.453E-01	870.466
PB-214	2.474E+03	2.749E+02	3.585E+00	4.797E-01	690.094
RN-219	8.214E+01	1.625E+01	2.169E+01	2.000E+00	3.786
RA-223	1.067E+02	3.056E+01	3.339E+01	5.294E+00	3.196
RA-224	4.793E+03	7.502E+02	3.322E+01	5.023E+00	144.262
RA-226	3.988E+03	7.309E+03	4.167E+01	7.635E+01	95.704
TH-227	8.839E+01	1.136E+01	1.123E+01	1.647E+00	7.874
TH-230	3.180E+03	3.936E+02	3.916E+02	3.156E+01	8.119
PA-234M	1.083E+03	1.897E+02	1.803E+02	1.970E+01	6.009
TH-234	7.450E+02	7.149E+01	3.618E+01	2.774E+00	20.590
U-235	8.246E+01	1.327E+01	1.236E+01	2.274E+00	6.674
NP-237	2.425E+02	2.750E+01	1.178E+01	1.184E+00	20.575
AM-243	1.844E+02	1.779E+01	2.183E+00	1.908E-01	84.465

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	4.603E+01		1.608E+01	1.900E+01	1.960E+00	2.423
NA-22	8.470E-01		1.162E+00	1.688E+00	1.559E-01	0.502
AL-26	-2.456E-01		6.549E-01	1.117E+00	1.041E-01	-0.220
TI-44	1.247E+01	+	1.545E+00	1.536E+00	1.241E-01	8.115
SC-46	6.168E-01		1.306E+00	2.160E+00	2.543E-01	0.286
V-48	-1.381E+00		3.625E+00	5.946E+00	6.590E-01	-0.232
CR-51	-1.522E+01		2.226E+01	2.753E+01	4.515E+00	-0.553
MN-54	4.558E+00		1.528E+00	1.714E+00	2.082E-01	2.659
CO-56	-5.591E-01		1.381E+00	2.041E+00	2.465E-01	-0.274
CO-58	2.159E+00		1.396E+00	2.055E+00	2.526E-01	1.051
FE-59	3.180E+00		4.000E+00	4.632E+00	4.838E-01	0.687
CO-60	1.400E+00	+	1.254E+00	1.693E+00	1.486E-01	0.827
ZN-65	4.867E+01		5.733E+00	4.397E+00	4.228E-01	11.070
SE-75	-1.983E+00		2.056E+00	2.545E+00	4.426E-01	-0.779
RB-82	-9.270E+00		2.134E+01	2.508E+01	3.112E+00	-0.370
RB-83	-1.117E+00		2.191E+00	3.527E+00	5.993E-01	-0.317
KR-85	1.148E+03		2.375E+02	3.088E+02	3.336E+01	3.718
SR-85	6.855E+00		1.418E+00	1.843E+00	1.992E-01	3.718
Y-88	7.850E+00		1.271E+00	1.669E+00	1.547E-01	4.705
NB-93M	2.743E+02		8.062E+01	3.915E+01	1.092E+01	7.005
NB-94	-7.886E-02		9.851E-01	1.630E+00	1.942E-01	-0.048
NB-95	1.526E+02		2.007E+01	4.389E+00	5.461E-01	34.774
ZR-95	7.948E-01		2.561E+00	3.503E+00	4.582E-01	0.227
RU-103	-7.558E-01		1.424E+00	2.403E+00	3.710E-01	-0.314

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
RU-106	1.846E+01		9.789E+00	1.422E+01	2.248E+00	1.298
AG-108M	4.101E+00		1.158E+00	1.573E+00	1.969E-01	2.606
AG-110M	9.855E-01		1.121E+00	1.545E+00	1.921E-01	0.638
SN-113	4.011E+00		1.700E+00	2.568E+00	2.393E-01	1.562
TE123M	2.810E-01		1.462E+00	1.886E+00	1.807E-01	0.149
SB-124	-4.177E-01		1.308E+00	1.974E+00	2.342E-01	-0.212
I-125	-6.642E+01		1.870E+01	2.627E+01	2.578E+00	-2.529
SB-125	1.542E+01	+	4.022E+00	5.065E+00	4.944E-01	3.044
SB-126	8.690E+01	+	1.741E+01	1.460E+01	1.828E+00	5.950
SB-127	1.746E+03		5.673E+02	7.954E+02	9.948E+01	2.196
I-129	7.063E+00		2.002E+00	2.474E+00	2.877E-01	2.855
I-131	-1.376E+01		1.679E+01	2.062E+01	2.500E+00	-0.668
BA-133	9.475E+01	+	1.648E+01	3.071E+00	5.033E-01	30.858
CS-134	1.110E+00	+	7.535E-01	1.830E+00	2.178E-01	0.607
CS-135	8.934E+01		1.723E+01	8.700E+00	1.542E+00	10.270
CS-136	1.174E+01		6.681E+00	9.722E+00	1.036E+00	1.208
CS-137	6.225E+00		1.342E+00	1.657E+00	2.068E-01	3.758
LA-138	-9.781E-01		1.652E+00	2.644E+00	2.533E-01	-0.370
CE-139	5.026E+00		1.380E+00	1.902E+00	1.753E-01	2.642
BA-140	1.791E+01		2.257E+01	2.650E+01	8.977E+00	0.676
LA-140	6.256E+01		9.069E+00	9.933E+00	9.518E-01	6.298
CE-141	2.115E+01		6.371E+00	5.195E+00	1.294E+00	4.072
CE-144	-1.531E+01		7.801E+00	1.215E+01	1.310E+00	-1.260
PM-144	6.504E-01		9.553E-01	1.434E+00	1.796E-01	0.453
PM-145	-1.872E+01		1.276E+01	5.479E+00	3.573E+00	-3.416
PM-146	1.466E+01	+	2.904E+00	3.472E+00	3.468E-01	4.222
ND-147	1.207E+02		4.515E+01	6.613E+01	7.288E+00	1.825
EU-152	3.943E+02	+	4.978E+01	1.858E+01	2.168E+00	21.227
GD-153	-9.154E-01		3.677E+00	5.480E+00	5.811E-01	-0.167
EU-154	3.071E+00		3.223E+00	4.680E+00	4.323E-01	0.656
EU-155	9.999E+01	+	1.134E+01	5.145E+00	5.168E-01	19.436
EU-156	3.314E+01		3.850E+01	5.627E+01	1.376E+01	0.589
HO-166M	-2.217E+00		1.891E+00	2.538E+00	3.177E-01	-0.873
HF-172	-2.654E+00		7.317E+00	1.083E+01	1.204E+00	-0.245
LU-172	1.884E-01		3.832E+01	5.596E+01	5.538E+00	0.003
LU-173	1.019E+02		1.937E+01	7.038E+00	1.275E+00	14.478
HF-175	8.582E-02		1.734E+00	2.158E+00	3.061E-01	0.040
LU-176	-1.506E+00		1.136E+00	1.375E+00	2.355E-01	-1.095
TA-182	1.292E+03	+	1.338E+02	1.789E+01	1.705E+00	72.191
IR-192	7.166E+00	+	2.384E+00	3.638E+00	3.705E-01	1.970
HG-203	-9.752E-01		2.101E+00	2.627E+00	4.978E-01	-0.371
BI-207	8.667E-01		9.131E-01	1.382E+00	1.588E-01	0.627
TL-208	9.844E+00		3.180E+00	4.530E+00	5.276E-01	2.173
BI-210M	6.462E+00		2.528E+00	2.883E+00	4.931E-01	2.241
BI-212	-9.607E+00		9.936E+00	1.159E+01	1.450E+00	-0.829
PB-212	7.568E+01		1.185E+01	3.377E+00	5.034E-01	22.410
RA-225	-3.190E+01		9.656E+00	1.497E+01	1.337E+00	-2.131
AC-228	4.650E+00		4.140E+00	6.101E+00	7.093E-01	0.762

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
PA-231	3.473E+02		7.381E+01	5.899E+01	1.027E+01	5.887
TH-231	2.324E+01	+	1.130E+01	1.138E+01	1.579E+00	2.043
PA-233	7.155E+00		5.358E+00	7.195E+00	1.918E+00	0.994
PA-234	-1.022E+00		3.706E+00	5.942E+00	6.468E-01	-0.172
AM-241	5.644E+01		5.296E+00	3.754E+00	2.762E-01	15.033
CM-243	6.809E+00		6.620E+00	9.374E+00	1.750E+00	0.726

Total number of lines in spectrum 150
Number of unidentified lines 98
Number of lines tentatively identified by NID 52 34.67%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
K-40	1.28E+09Y	1.00	1.726E+01	1.726E+01	1.247E+01	72.27	
PB-210	22.26Y	1.00	9.796E+02	9.821E+02	0.916E+02	9.33	
PB-211	3.28E+04Y	1.00	1.814E+02	1.814E+02	0.298E+02	16.43	
BI-214	1602.00Y	1.00	2.518E+03	2.518E+03	0.139E+03	5.51	
PB-214	1602.00Y	1.00	2.474E+03	2.474E+03	0.275E+03	11.11	
RN-219	3.28E+04Y	1.00	8.214E+01	8.214E+01	1.625E+01	19.78	
RA-223	3.28E+04Y	1.00	1.067E+02	1.067E+02	0.306E+02	28.64	
RA-224	1.41E+10Y	1.00	4.793E+03	4.793E+03	0.750E+03	15.65	
RA-226	1602.00Y	1.00	3.988E+03	3.988E+03	7.309E+03	183.28	
TH-227	3.28E+04Y	1.00	8.839E+01	8.839E+01	1.136E+01	12.85	
PA-234M	4.47E+09Y	1.00	1.083E+03	1.083E+03	0.190E+03	17.51	
TH-234	4.47E+09Y	1.00	7.450E+02	7.450E+02	0.715E+02	9.60	
U-235	7.04E+08Y	1.00	8.246E+01	8.246E+01	1.327E+01	16.09	
Total Activity :			1.714E+04	1.714E+04			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
CO-57	270.90D	1.08	1.302E+00	1.404E+00	1.183E+00	84.28	
CD-109	464.00D	1.05	8.224E+02	8.596E+02	1.112E+02	12.93	
SN-126	1.00E+05Y	1.00	8.265E+01	8.265E+01	0.947E+01	11.45	
NP-237	2.14E+06Y	1.00	2.425E+02	2.425E+02	0.275E+02	11.34	
Total Activity :			1.149E+03	1.186E+03			

Nuclide Type : ACTIVATION

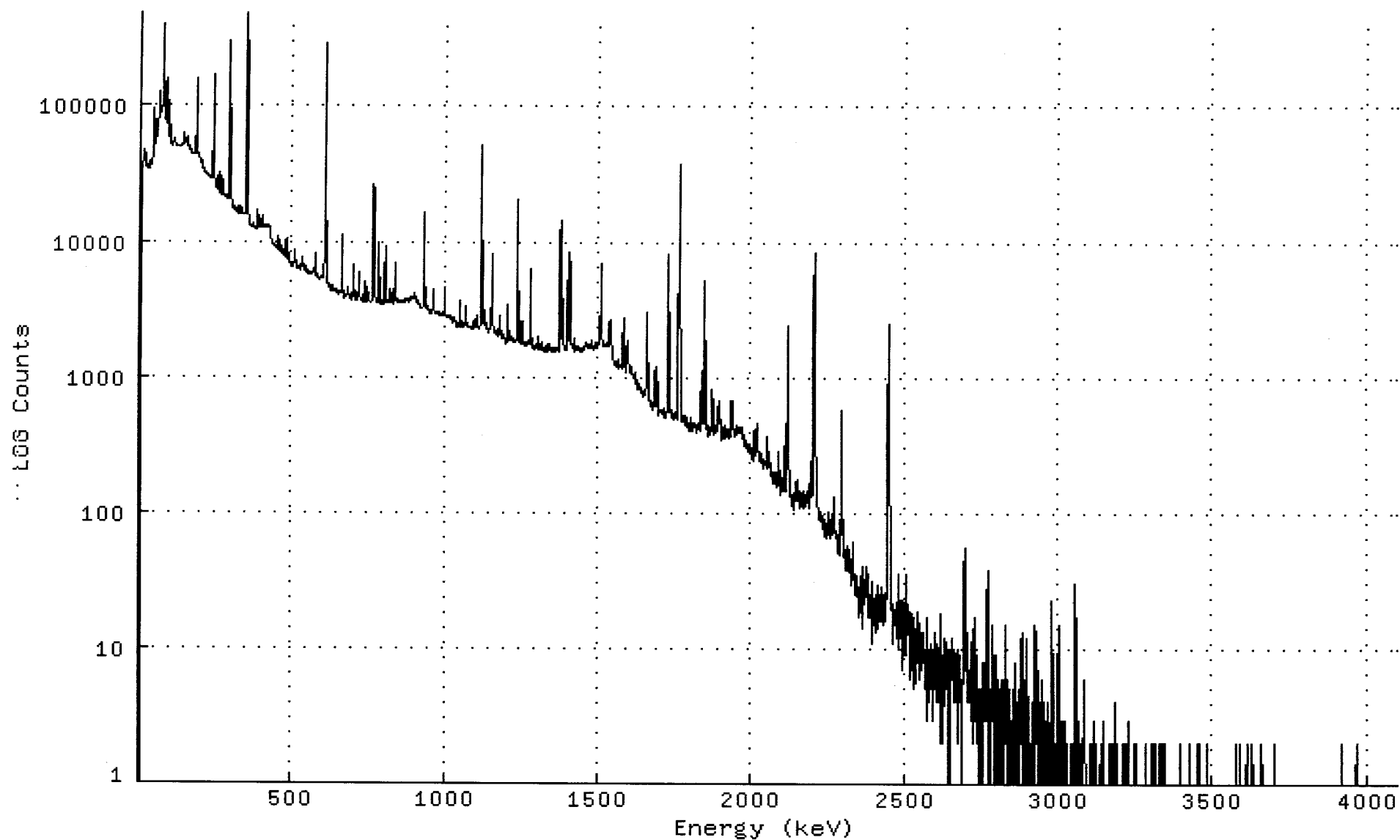
Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
TH-230	7.70E+04Y	1.00	3.180E+03	3.180E+03	0.394E+03	12.38	
AM-243	7380.00Y	1.00	1.844E+02	1.844E+02	0.178E+02	9.65	
Total Activity :			3.364E+03	3.364E+03			

Grand Total Activity : 2.165E+04 2.169E+04

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301307_GE3_GAS1202_190136.CNF;1
Title :
Sample Title: MQZ-51-2-130303
Start Time: 1-APR-2013 14:40: Sample Time: 3-MAR-2013 00:00: Energy Offset: -3.21163E-01
Real Time : 0 01:26:55.15 Sample ID : 1303013-07 Energy Slope : 1.00005E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel

1:	0	0	0	0	0	0	0	40
9:	11706	35947	37871	40440	43494	39798	44710	46158
17:	40979	37825	37373	35905	34067	33956	33478	33606
25:	33549	33823	35087	33908	32945	32948	34964	37480
33:	34319	33942	34234	35910	35785	35289	36344	37978
41:	39588	40432	42105	43517	48695	93287	82555	50879
49:	50254	56807	53758	57385	76095	63510	57853	58575
57:	61437	65333	70957	75252	79079	85867	122811	100217
65:	84910	84384	92442	94417	87807	87243	89298	90964
73:	96890	175308	245997	196158	389417	182494	118673	95247
81:	96300	75899	85422	99780	74204	87556	154466	107392
89:	87568	97256	72583	105197	106718	79928	73863	57117
97:	56587	70480	63489	52295	50358	49900	49892	49298
105:	49847	49918	49485	50156	51510	53328	56413	54807
113:	54727	52324	51717	49710	48931	48916	48171	48247
121:	49082	49597	48761	48915	48687	48867	49521	49355
129:	49323	49389	49605	48972	49232	49262	49290	49367
137:	50116	50240	50772	51225	51666	50848	55065	61495
145:	54252	51577	51077	51823	52335	52365	52899	52367
153:	53684	57767	54243	51691	50768	50327	49389	48723
161:	48026	47230	49127	47684	46110	45746	44273	44460
169:	44491	44026	43638	43468	43199	42901	42812	42770
177:	42458	42635	42856	42880	43168	43403	43281	44253
185:	73484	152363	88974	51158	44626	43633	42461	41027
193:	40574	40089	39944	40775	39777	38757	38434	37989
201:	38030	37317	36502	36491	37375	36026	34325	33743
209:	33146	33341	33289	32726	32260	31952	31532	31473
217:	31371	31014	30778	30695	30830	30336	30231	29851
225:	29744	29876	29689	29251	28968	28676	28687	28737
233:	28436	28881	31001	36432	30621	28204	28318	28755
241:	69494	163853	75256	35814	29885	28703	26590	25297
249:	24669	24603	24039	23967	23856	23957	24416	27461
257:	25712	27261	31528	25495	23138	22661	22557	21941
265:	21946	21820	21702	22175	28292	28911	29059	25607
273:	23099	25575	26742	22471	21294	20781	20468	20827
281:	21360	20791	21229	21315	20776	21488	20663	20289
289:	19960	19946	20034	19922	21023	71522	294221	175351
297:	49772	29190	27847	25845	20906	20029	19623	18770
305:	18603	17629	17188	16876	16709	16746	16564	16783
313:	17075	17635	17225	16498	16399	16279	15930	15946
321:	15930	15775	16948	17869	16406	16064	15830	15648
329:	16766	17743	16295	15769	16551	17034	16104	15578
337:	15926	16604	16230	15461	15609	15659	15597	15533
345:	15335	15331	15573	15987	17395	25942	200675	484823
353:	182291	50093	30269	27225	20323	16261	14800	13887
361:	13569	13450	12993	12759	12663	12885	12741	12428
369:	12711	12633	12615	13068	12317	12311	12339	12606
377:	12552	12420	12605	12224	12314	12216	12513	12239
385:	12347	14004	15570	14941	16514	13989	12892	12439
393:	12399	12526	12628	12639	12324	12630	12438	12673
401:	13708	15279	13195	13366	15214	14584	13024	12600
409:	12725	12609	12490	12637	12612	12536	12425	12536
417:	12693	12519	12665	12471	12801	12485	12424	12381
425:	12398	12551	12581	12208	11392	11053	10549	10313

433:	10081	9814	9774	9613	9587	9500	9408	9429
441:	9110	9182	9036	9160	9418	9031	8792	8702
449:	8648	8674	8711	8692	8806	9716	10763	9306
457:	8454	8322	8336	8246	9197	9808	8883	8134
465:	8081	7982	7918	8019	8358	8917	8286	7730
473:	7907	8343	8218	7955	7556	7528	7831	10068
481:	9906	7895	7373	7225	7407	8562	10436	9123
489:	7301	7104	7117	7040	6752	6920	6808	6705
497:	6731	6643	6710	6699	6625	6714	6544	6414
505:	6601	6514	6286	6777	7490	8461	8497	8086
513:	7373	6770	6514	6377	6224	6346	6247	6267
521:	6149	6281	6078	6151	6306	6291	6033	6301
529:	6284	6193	6168	6230	7059	7565	6496	6285
537:	6458	6344	6212	6073	5937	6275	6577	6670
545:	6167	5981	6155	5956	5752	5907	5698	5826
553:	5919	5744	5827	5751	5691	5679	5752	5847
561:	5696	5771	5693	5647	5601	5628	5735	5607
569:	5732	5833	5709	5929	6089	5911	5741	5566
577:	5448	5700	6221	7902	6908	5703	5378	5456
585:	5336	5431	5309	5292	5338	5325	5269	5244
593:	5226	5160	5406	5367	5381	5278	5482	5287
601:	5228	5351	5206	5474	5398	5606	7746	63866
609:	279862	224259	56898	20520	15313	11953	8179	6757
617:	5897	5122	4835	4756	4685	4511	4586	4598
625:	4484	4463	4349	4221	4354	4459	4616	4444
633:	4705	4550	4367	4255	4341	4350	4388	4382
641:	4302	4275	4160	4232	4151	4029	4218	4321
649:	4364	4227	4218	4061	3985	4034	4105	4045
657:	4139	4152	4242	4262	4219	4107	4063	5163
665:	11003	11122	5752	4486	4318	4092	4120	3879
673:	4014	3934	3741	3972	3877	3918	3955	3858
681:	3905	4063	4433	4249	3951	3997	3893	4005
689:	3827	3837	3665	3730	3776	3791	3615	3688
697:	3876	4089	3985	3840	3857	4635	6535	5435
705:	4408	3951	4024	4196	3860	3972	4018	3647
713:	3669	3815	3643	3545	3682	3877	4470	5705
721:	4607	3900	3912	3818	3673	3557	3635	3638
729:	3666	3595	3632	3573	3822	3896	3667	3456
737:	3517	3515	3601	3675	4200	4925	4949	4139
745:	3745	3609	3616	3565	3521	3582	3628	4020
753:	3975	3728	3640	3531	3483	3487	3458	3504
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769:	23719	9146	5027	4517	4208	3895	3646	3724
777:	3520	3432	3591	3592	3592	3543	3429	3792
785:	6435	9549	6522	4377	3770	3816	3489	3469
793:	3390	3366	3538	3468	3497	3564	3543	3520
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809:	3737	3665	3511	3516	3500	3528	3557	3559
817:	3431	3452	3502	3661	4402	4041	3558	3440
825:	3784	4091	3912	3598	3492	3600	3754	4387
833:	3935	3635	3417	3520	3586	4913	6721	5431
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849:	3504	3480	3531	3620	3586	3485	3458	3556
857:	3439	3485	3576	3511	3567	3551	3536	3565
865:	3527	3558	3587	3682	3546	3503	3512	3632
873:	3581	3755	3645	3548	3680	3579	3656	3583
881:	3563	3649	3714	3742	3527	3646	3648	3663
889:	3749	3783	3653	3710	3674	3652	3726	3716
897:	3774	3852	3750	3762	3661	3662	3781	4027
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937:	3818	3581	3481	3259	3156	3217	3144	3161
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953:	3006	2890	3009	2972	3041	2943	3001	2885
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993:	2807	2836	2846	2837	2942	2852	2964	3431
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1145:	2130	2253	2152	2289	2245	2231	2192	2252
1153:	2456	4090	7869	6742	3511	2697	2364	2223
1161:	2272	2203	2158	2152	2071	2164	2077	2189
1169:	2089	2075	2043	2137	2260	2138	2097	2091
1177:	1976	2083	2008	2106	2397	2800	2563	2192
1185:	2101	2018	1929	1953	1937	1950	2006	1956
1193:	1990	1938	1898	1929	1945	1877	1924	1733
1201:	1883	1895	1858	1854	1797	2066	2735	3398
1209:	2447	1926	1946	1919	1825	1851	1863	1861
1217:	1911	1970	1952	1899	1911	1859	1806	1769
1225:	1886	1815	1781	1822	1844	1779	1787	1793
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1241:	3012	2483	2326	2033	1914	1786	1781	1780
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1297:	1640	1617	1597	1645	1611	1599	1831	1946
1305:	1717	1690	1646	1587	1590	1580	1580	1652
1313:	1717	1575	1680	1620	1766	1772	1651	1626
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1361:	1582	1546	1641	1509	1617	1587	1553	1584
1369:	1584	1565	1621	1585	1528	1683	1800	3547
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1385:	3733	3623	2406	1798	1719	1629	1636	1616

1393:	1601	1577	1621	1562	1580	1620	1652	2319
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1409:	6270	3065	1956	1856	1740	1755	1720	1677
1417:	1596	1608	1641	1646	1532	1537	1526	1708
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1433:	1589	1605	1560	1657	1582	1577	1566	1635
1441:	1638	1601	1498	1602	1610	1614	1622	1553
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1457:	1571	1628	1722	1755	1767	1779	1661	1680
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1481:	1627	1751	1681	1641	1636	1684	1673	1625
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1585:	1798	1320	1191	1177	1201	1139	1111	1087
1593:	1226	1523	1814	1572	1275	1359	1858	1746
1601:	1362	1120	1090	1103	1067	1162	1134	1137
1609:	1192	1067	1022	1022	1063	992	1028	965
1617:	1006	1000	1005	941	1063	987	886	947
1625:	974	903	928	886	816	873	853	841
1633:	895	811	829	878	824	873	784	808
1641:	778	802	780	744	773	752	741	699
1649:	758	729	734	726	722	726	749	810
1657:	781	822	859	1534	2973	2910	1595	961
1665:	780	765	697	697	670	636	663	628
1673:	608	660	611	567	617	588	610	628
1681:	628	683	820	1119	972	754	625	600
1689:	661	611	717	945	1177	1026	812	690
1697:	583	602	518	555	570	553	554	542
1705:	549	567	537	551	549	559	539	541
1713:	565	503	577	515	582	540	492	491
1721:	535	537	546	529	527	547	763	2066
1729:	6067	8090	4823	1926	958	870	733	566
1737:	563	521	566	534	515	505	539	534
1745:	494	502	533	489	527	509	549	498
1753:	523	508	494	516	521	539	516	489
1761:	657	1770	9263	27750	36166	19508	6377	2644
1769:	1876	1221	825	734	598	493	461	513
1777:	475	480	462	497	462	508	495	466
1785:	467	455	432	500	455	445	422	425
1793:	442	441	437	403	449	460	399	425
1801:	432	491	419	404	431	446	401	415
1809:	453	431	457	451	458	448	449	452
1817:	428	451	441	386	438	427	412	415
1825:	438	410	423	432	433	432	452	447
1833:	402	426	417	445	620	998	1117	754
1841:	521	465	453	456	642	1726	4120	5128
1849:	2924	1153	715	578	515	457	415	435
1857:	445	421	424	365	394	388	378	405
1865:	422	410	408	394	398	427	458	623

1873:	804	801	600	433	419	411	419	379
1881:	440	418	389	439	422	390	404	424
1889:	471	589	604	511	426	451	521	618
1897:	662	544	514	468	398	414	339	383
1905:	384	369	405	382	430	377	353	368
1913:	392	381	392	355	434	396	388	376
1921:	357	382	412	365	388	353	390	408
1929:	394	366	415	388	366	418	504	655
1937:	673	576	491	479	436	411	389	368
1945:	399	414	385	375	401	403	436	383
1953:	403	380	393	391	423	411	396	413
1961:	405	400	412	415	421	391	407	354
1969:	389	418	424	409	375	372	346	375
1977:	347	306	325	321	302	343	313	304
1985:	316	313	321	287	308	311	289	279
1993:	302	322	322	293	273	292	293	299
2001:	251	295	273	300	276	236	275	271
2009:	273	348	396	350	309	264	267	323
2017:	376	451	307	284	300	291	282	281
2025:	258	275	241	248	250	270	266	250
2033:	250	260	248	247	211	235	233	217
2041:	242	245	232	235	223	230	228	230
2049:	247	257	214	294	358	305	252	219
2057:	215	220	227	256	220	200	218	209
2065:	215	217	207	163	189	194	197	191
2073:	188	184	170	198	188	180	165	182
2081:	195	192	186	176	154	211	159	215
2089:	224	279	223	194	170	183	149	137
2097:	159	166	169	156	142	181	148	152
2105:	168	169	145	195	239	306	275	187
2113:	164	168	142	289	712	1847	2371	1617
2121:	685	329	241	182	138	155	130	135
2129:	142	120	124	126	112	133	125	108
2137:	139	105	132	135	138	123	128	123
2145:	143	122	168	175	154	145	135	133
2153:	123	125	135	121	108	144	129	135
2161:	113	140	119	128	125	122	108	128
2169:	127	137	144	132	129	122	130	111
2177:	130	134	138	130	129	119	126	144
2185:	129	128	145	109	133	144	139	191
2193:	237	174	137	131	133	149	135	154
2201:	290	1026	3983	8110	8014	4095	1435	686
2209:	426	306	216	187	135	123	128	112
2217:	103	105	106	90	108	96	91	87
2225:	101	97	88	96	85	95	84	86
2233:	79	76	75	79	83	67	85	76
2241:	90	77	65	82	84	75	85	81
2249:	70	87	78	101	69	89	64	87
2257:	80	71	78	87	78	98	70	76
2265:	75	130	112	94	83	74	86	71
2273:	71	74	65	68	69	72	66	52
2281:	51	66	57	69	57	62	63	88
2289:	49	57	78	230	505	569	364	174
2297:	108	75	67	55	47	48	59	50
2305:	50	45	48	52	38	44	58	46
2313:	58	53	38	53	45	47	41	37
2321:	40	42	33	40	44	29	36	45
2329:	32	52	52	60	52	39	25	33
2337:	33	35	34	31	31	34	25	24
2345:	25	26	22	17	26	23	28	22

2353:	24	34	24	19	30	28	20	29
2361:	29	14	29	23	40	26	22	23
2369:	21	31	29	24	28	31	29	24
2377:	40	31	30	18	23	23	17	23
2385:	18	17	18	25	22	22	16	24
2393:	31	11	17	27	17	20	17	15
2401:	16	22	25	22	20	18	13	14
2409:	14	26	25	29	16	15	17	16
2417:	19	22	19	23	24	26	21	16
2425:	28	19	22	15	18	25	15	18
2433:	15	17	19	26	16	23	21	24
2441:	26	27	32	49	145	517	1536	2436
2449:	1930	869	312	144	86	74	53	33
2457:	33	24	15	21	19	19	11	20
2465:	19	15	18	16	19	19	18	19
2473:	22	14	15	19	12	17	17	10
2481:	13	35	17	23	17	17	12	17
2489:	13	23	13	11	13	7	15	20
2497:	15	15	22	14	12	9	9	14
2505:	35	14	21	27	17	14	16	13
2513:	14	13	12	14	15	9	19	6
2521:	8	18	8	11	8	9	8	15
2529:	17	6	13	15	5	6	12	14
2537:	10	10	13	8	11	17	14	14
2545:	19	13	8	6	9	9	8	13
2553:	8	13	7	8	7	8	11	8
2561:	8	13	8	10	6	10	8	5
2569:	9	6	17	3	5	10	15	5
2577:	6	9	10	9	4	4	7	7
2585:	11	5	9	9	5	6	7	3
2593:	7	10	6	10	13	9	5	10
2601:	6	8	6	9	4	5	11	7
2609:	8	5	4	6	6	18	17	14
2617:	10	6	2	9	3	9	7	5
2625:	8	2	7	6	6	8	6	12
2633:	11	5	10	6	7	7	9	6
2641:	3	10	8	6	1	5	4	1
2649:	9	5	10	6	9	12	9	6
2657:	7	5	7	4	8	5	10	9
2665:	4	7	8	4	6	7	6	2
2673:	7	7	10	4	7	9	6	4
2681:	8	5	5	6	3	4	1	5
2689:	6	6	8	6	15	35	56	28
2697:	17	7	14	24	4	13	6	4
2705:	5	8	6	7	7	6	4	4
2713:	7	3	7	7	5	9	9	14
2721:	14	3	2	2	3	3	6	14
2729:	17	14	7	6	9	2	6	4
2737:	8	2	4	1	4	5	4	5
2745:	4	3	5	5	1	2	6	8
2753:	3	1	3	5	8	5	3	6
2761:	5	3	5	3	5	7	6	7
2769:	20	38	37	26	16	5	1	4
2777:	4	3	1	5	5	5	4	3
2785:	11	15	8	9	5	3	0	4
2793:	1	3	1	1	7	9	4	9
2801:	4	1	2	4	5	5	1	2
2809:	3	5	5	4	6	6	5	2
2817:	5	3	1	3	6	3	3	1
2825:	2	5	15	3	4	2	3	6

2833:	3	1	2	4	4	2	5	2
2841:	3	2	1	3	1	1	1	3
2849:	2	1	1	1	5	2	2	4
2857:	1	2	8	2	3	1	1	2
2865:	2	4	3	1	5	1	1	3
2873:	3	3	2	2	2	5	6	10
2881:	11	13	7	2	1	4	4	0
2889:	1	3	1	1	5	7	12	7
2897:	7	1	5	4	2	1	0	0
2905:	3	1	2	0	1	1	1	1
2913:	2	4	1	2	3	0	1	5
2921:	8	15	14	14	13	4	3	6
2929:	3	2	7	2	3	4	3	2
2937:	1	1	4	1	2	2	1	0
2945:	6	0	0	0	1	0	2	2
2953:	1	4	0	2	1	1	0	1
2961:	3	1	1	0	1	2	1	4
2969:	2	0	0	1	0	2	0	1
2977:	3	10	23	10	9	5	4	2
2985:	1	2	1	1	1	0	0	2
2993:	1	1	1	0	1	4	6	15
3001:	10	7	1	1	0	1	3	0
3009:	1	1	1	0	1	2	1	3
3017:	2	0	1	1	1	1	3	1
3025:	1	2	0	2	0	1	0	0
3033:	1	0	0	0	1	1	1	2
3041:	0	0	1	1	2	0	0	1
3049:	1	1	2	2	10	30	16	17
3057:	13	2	2	0	2	3	1	1
3065:	1	1	0	2	1	1	0	2
3073:	0	0	0	1	0	0	0	1
3081:	5	3	6	6	3	2	0	1
3089:	1	0	1	1	1	1	0	1
3097:	1	1	0	0	2	1	1	0
3105:	2	0	2	1	0	1	0	0
3113:	0	1	2	3	0	2	0	0
3121:	0	0	1	0	0	0	0	0
3129:	1	1	0	1	1	0	1	2
3137:	0	0	0	0	0	1	3	1
3145:	2	1	2	0	0	0	0	0
3153:	0	1	0	1	1	0	0	0
3161:	1	1	1	2	0	0	0	1
3169:	2	1	1	1	0	0	1	1
3177:	0	2	1	0	2	4	0	2
3185:	1	1	0	2	1	0	0	0
3193:	1	1	0	0	1	1	0	1
3201:	1	1	0	1	0	0	0	0
3209:	2	1	0	0	2	2	2	0
3217:	0	2	0	1	1	1	1	1
3225:	1	1	3	1	1	0	0	0
3233:	1	0	1	1	1	1	1	0
3241:	0	0	0	2	0	1	0	0
3249:	0	0	2	1	1	0	0	0
3257:	1	1	1	1	1	0	0	0
3265:	0	0	0	0	0	0	1	0
3273:	1	0	0	0	0	0	0	0
3281:	1	2	0	0	1	0	0	0
3289:	1	1	1	0	0	0	0	0
3297:	0	0	1	1	2	0	0	1
3305:	0	2	2	0	0	1	1	2

3313:	0	0	0	0	0	0	1	1
3321:	1	0	0	2	1	2	0	0
3329:	1	0	0	0	2	0	0	1
3337:	0	2	0	0	0	0	2	0
3345:	0	0	1	0	0	0	0	0
3353:	0	0	0	1	0	0	0	0
3361:	0	1	1	0	1	1	0	0
3369:	0	1	1	1	0	1	1	0
3377:	1	0	1	1	1	1	0	1
3385:	0	0	1	1	0	0	0	1
3393:	0	2	1	1	0	0	0	0
3401:	0	0	0	0	1	0	0	0
3409:	0	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	2	0
3425:	0	0	0	1	0	1	0	1
3433:	0	0	0	0	0	0	0	0
3441:	1	0	0	1	1	0	0	0
3449:	0	0	0	2	0	0	0	1
3457:	2	1	0	0	0	0	0	1
3465:	0	0	0	0	0	0	0	0
3473:	0	0	1	0	0	0	0	2
3481:	0	0	1	0	0	0	1	1
3489:	0	0	1	0	0	0	0	1
3497:	0	0	0	1	0	0	0	0
3505:	0	0	1	0	0	0	0	0
3513:	1	0	0	1	0	0	1	0
3521:	0	0	0	1	0	0	0	0
3529:	0	0	1	0	0	0	0	0
3537:	0	0	1	0	0	0	0	0
3545:	0	0	1	0	1	0	0	0
3553:	1	0	1	0	0	0	0	0
3561:	0	0	0	0	0	0	0	1
3569:	0	0	1	0	2	0	2	1
3577:	0	0	1	0	0	0	0	0
3585:	0	2	0	2	1	0	1	0
3593:	1	0	0	0	0	0	0	1
3601:	1	0	0	0	0	1	1	1
3609:	2	0	0	0	1	0	1	0
3617:	0	0	0	1	0	0	1	1
3625:	2	2	0	0	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	1	1	0	0	0	0
3649:	1	0	0	0	0	0	0	0
3657:	2	0	0	1	0	0	0	0
3665:	0	0	0	0	1	0	0	0
3673:	0	0	0	0	0	0	1	0
3681:	0	0	0	1	0	0	0	0
3689:	0	1	0	0	0	0	0	0
3697:	0	0	2	1	0	0	0	0
3705:	0	0	1	0	0	0	0	0
3713:	0	1	0	0	0	1	0	0
3721:	0	0	0	0	0	0	0	1
3729:	0	1	0	0	0	1	0	0
3737:	0	1	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	1	0	0	0	1	0
3761:	0	0	0	0	0	0	1	0
3769:	0	1	0	0	0	1	0	0
3777:	0	0	0	0	1	0	0	0
3785:	0	0	0	0	1	0	0	0

3793:	0	1	0	0	1	0	1	0
3801:	0	0	0	0	0	0	0	1
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1
3825:	0	0	0	0	0	1	1	1
3833:	1	0	1	0	0	0	1	0
3841:	0	0	0	1	0	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	0
3865:	0	1	0	0	0	0	0	0
3873:	1	0	0	0	1	0	0	0
3881:	0	0	1	0	0	0	1	0
3889:	0	1	0	0	0	0	0	0
3897:	1	0	0	0	0	0	0	0
3905:	0	1	0	0	0	0	0	0
3913:	0	0	0	0	2	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	2	0	0	1	0	0
3969:	0	0	0	0	0	0	0	1
3977:	0	0	0	0	0	0	0	0
3985:	1	0	0	0	1	1	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	1	0	0	0	0
4017:	0	0	0	1	0	0	0	0
4025:	0	0	1	0	1	0	0	0
4033:	0	0	1	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	1	0	1	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	1	0	0	0	1	1
4073:	0	1	0	0	0	1	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Sample ID : 1303013-08

Acquisition date : 1-APR-2013 14:38:02

VAX/VMS Peak Search Report Generated 1-APR-2013 15:38:39.54

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301308_GE1_GAS1202_190135.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-52-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 14:38:02.
 Sample ID : 1303013-08 Sample Quantity : 5.61370E+02 gram
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE1 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:18.00 0.5%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	46.15*	3096	8532	1.65	46.38	44	6	10.1		PB-210
0	53.24*	744	10036	1.45	53.47	51	6	43.2		
0	63.12*	1935	11555	1.83	63.36	61	5	17.3		TH-234
0	67.68*	482	12346	1.04	67.91	67	5	69.7		
0	76.30*	24917	26689	3.44	76.53	71	11	2.8		
3	84.07*	2460	6122	1.07	84.30	83	9	9.1	2.35E+02	
3	87.17*	4318	12235	1.95	87.39	83	9	8.8		NP-237 SN-126 CD-109
0	93.69*	2010	10695	1.10	93.92	91	6	17.2		
0	112.79*	427	7932	5.25	113.01	111	6	66.8		
0	143.80*	647	9774	1.33	144.02	141	7	51.3		U-235
0	154.26	833	9626	1.98	154.49	151	7	39.7		
0	186.14*	7440	9156	1.80	186.36	182	8	5.0		RA-226
0	205.69*	282	4573	1.95	205.91	204	5	73.4		U-235
3	235.94	663	3103	1.39	236.16	233	14	24.6	9.89E+00	
3	241.99*	7736	2856	1.37	242.21	233	14	3.0		RA-224
1	255.94	206	1286	1.46	256.16	255	8	43.7	1.09E+01	
1	258.62	614	3135	1.79	258.84	255	8	28.9		
6	270.01	1570	5031	2.89	270.23	266	12	17.1	3.92E+00	
6	274.76	290	2873	1.55	274.97	266	12	56.4		
0	295.22*	17065	2850	1.88	295.43	293	6	1.8		PB-214
0	323.90	220	2084	1.43	324.11	323	5	63.7		RA-223
0	329.02	149	2595	1.68	329.24	328	6	109.2		
0	351.89*	29612	2932	1.37	352.10	348	8	1.3		PB-214
0	387.27	514	2845	3.18	387.47	383	9	38.4		
3	401.97	382	2200	2.28	402.18	397	13	42.5	1.16E+00	RN-219
3	405.47	313	2168	2.29	405.68	397	13	52.0		PB-211
0	427.75	164	1724	2.42	427.95	426	6	82.1		
0	454.75	234	1518	1.86	454.95	452	7	56.8		
0	462.27	170	1475	1.37	462.47	459	7	76.7		
0	469.90	115	1439	3.26	470.11	467	7	110.4		
0	480.28	187	977	1.88	480.48	478	5	52.0		
0	487.24	208	1383	1.86	487.44	484	7	60.9		
0	501.42	94	808	2.75	501.62	500	5	93.5		
0	510.76*	310	1747	3.02	510.96	506	10	52.1		

AG
4/2/13

Sample ID : 1303013-08

Acquisition date : 1-APR-2013 14:38:02

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	533.91	123	1031	1.90	534.11	531	6	84.3		
0	580.12	114	1340	1.80	580.32	577	8	112.8		
0	609.28*	21780	1587	1.99	609.47	603	12	1.5		BI-214
5	660.45	123	655	2.97	660.64	657	14	71.9	6.19E-01	CS-137
5	665.47	652	489	1.55	665.66	657	14	12.8		
0	702.65	209	727	1.83	702.84	700	7	44.9		
0	742.42	126	784	1.68	742.61	739	8	78.7		
0	752.39	102	577	1.75	752.57	750	6	76.9		
0	768.32	2162	924	2.05	768.51	764	10	6.8		
0	785.84	496	963	1.78	786.02	781	10	25.1		
0	806.20	494	832	1.93	806.38	802	9	22.9		
0	831.82	165	625	1.89	832.00	829	7	53.1		PB-211
0	839.05	347	794	1.89	839.23	836	9	31.1		
0	903.45	79	777	3.48	903.62	901		8123.6		
0	934.20*	1111	1056	1.96	934.37	928	12	13.2		
0	963.88*	146	738	2.33	964.05	959	9	69.2		
0	1000.41*	123	628	1.28	1000.58	997	8	72.8		PA-234M
0	1033.21	60	421	3.31	1033.38	1031		7116.6		
0	1052.09	100	612	1.75	1052.25	1048	9	91.2		
4	1095.44	88	372	2.95	1095.60	1092	17	77.0	1.39E+00	
4	1103.82	95	539	2.96	1103.98	1092	17	89.3		
0	1120.29*	4730	695	2.09	1120.45	1116	10	3.6		BI-214
0	1132.97	60	449	2.93	1133.13	1131		7120.2		
1	1155.05	539	401	2.24	1155.20	1150	15	15.0	2.93E+00	
1	1159.05	60	398	2.24	1159.20	1150		15122.2		
0	1173.34*	113	675	3.16	1173.50	1166	13	97.0		
0	1181.86	99	425	2.09	1182.01	1179	8	74.7		
0	1206.90	108	494	2.08	1207.05	1204	9	76.3		
0	1238.20	1712	512	2.00	1238.35	1234	10	6.9		
0	1253.56	112	386	2.28	1253.71	1250	8	63.7		
0	1280.82	412	425	1.98	1280.97	1277	10	21.1		
0	1316.72	87	377	5.55	1316.86	1313	9	83.6		
2	1377.71*	1204	245	2.16	1377.85	1374	16	7.0	1.87E+00	
2	1385.22	215	300	2.46	1385.36	1374	16	29.4		
2	1401.58	431	315	2.37	1401.71	1396	16	16.6	1.04E+00	
2	1407.99	671	264	1.91	1408.13	1396	16	10.9		
0	1432.96	48	247	1.96	1433.10	1430		7112.4		
0	1460.71*	547	452	1.96	1460.85	1457	9	16.4		K-40
0	1509.15	524	570	2.32	1509.28	1504	11	19.7		
3	1538.46	180	344	2.62	1538.59	1532	16	37.9	3.12E+00	
3	1543.44	137	229	2.07	1543.57	1532	16	39.8		
0	1583.79	173	325	2.19	1583.92	1579	11	43.4		
3	1594.62	81	195	2.15	1594.75	1591	13	59.2	1.02E+00	
3	1599.37	83	242	2.23	1599.49	1591	13	65.3		
0	1661.22	261	255	2.33	1661.34	1655	12	27.4		
0	1693.97	87	155	3.89	1694.09	1689	11	60.2		
0	1712.33	39	93	3.54	1712.44	1709	8	92.0		
0	1729.64	780	160	2.32	1729.76	1725	12	9.6		
0	1754.12	32	45	1.11	1754.23	1751	6	76.1		
0	1764.47*	3916	150	2.33	1764.58	1758	13	3.4		BI-214
0	1782.87	34	75	3.08	1782.98	1779	9	98.6		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1792.17	52	87	6.47	1792.28	1788	12	77.6		
3	1838.15	72	67	2.99	1838.26	1832	23	52.1	1.30E+00	
3	1842.89	22	55	2.25	1843.00	1832	23	149.2		
3	1847.33	502	54	2.14	1847.44	1832	23	10.0		
0	1873.57	85	90	2.05	1873.67	1868	12	50.9		
0	1934.82	47	127	3.67	1934.92	1929	13	103.8		
0	2010.94	25	50	3.05	2011.03	2006	8	105.2		
0	2018.07	56	66	3.32	2018.16	2014	11	62.2		
3	2051.91	20	33	2.30	2052.00	2048	10	108.4	3.88E+00	
3	2054.15	16	35	3.06	2054.24	2048	10	138.8		
0	2118.44*	284	30	2.42	2118.52	2114	12	14.0		
1	2146.68	24	26	2.56	2146.77	2143	10	85.1	8.55E+00	
1	2149.88	12	19	2.56	2149.96	2143	10	137.1		
0	2204.01	960	49	2.34	2204.09	2198	13	7.1		BI-214
7	2293.09	63	11	2.87	2293.16	2289	11	31.4	4.92E+00	
7	2296.66	9	5	3.13	2296.74	2289	11	188.2		
5	2327.23	7	2	2.78	2327.30	2326	14	78.1	3.05E+00	
5	2331.43	19	11	2.87	2331.50	2326	14	78.6		
0	2344.12	16	2	6.83	2344.19	2339	11	64.8		
0	2378.48	6	3	1.20	2378.54	2375	6	116.0		
0	2431.71	9	0	3.20	2431.78	2428	7	66.7		
0	2447.39	301	11	2.19	2447.45	2442	11	12.3		
0	2614.42*	48	2	2.42	2614.48	2610	10	32.9		
0	2729.75	5	2	2.74	2729.79	2724	8	136.6		
0	3053.18	10	0	1.96	3053.20	3050	7	63.2		

Total number of lines in spectrum 110
Number of unidentified lines 69
Number of lines tentatively identified by NID 41 37.27%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
K-40	1.28E+09Y	1.00	1.358E+01	1.358E+01	0.264E+01	19.47	
PB-210	22.26Y	1.00	3.779E+01	3.789E+01	0.508E+01	13.40	
PB-211	3.28E+04Y	1.00	9.922E+00	9.922E+00	3.765E+00	37.94	
BI-214	1602.00Y	1.00	6.743E+01	6.743E+01	0.370E+01	5.48	
PB-214	1602.00Y	1.00	6.728E+01	6.729E+01	1.102E+01	16.38	
RN-219	3.28E+04Y	1.00	5.518E+00	5.518E+00	2.425E+00	43.95	
RA-223	3.28E+04Y	1.00	4.530E+00	4.530E+00	3.096E+00	68.33	
RA-224	1.41E+10Y	1.00	1.281E+02	1.281E+02	0.295E+02	23.06	
RA-226	1602.00Y	1.00	1.280E+02	1.280E+02	2.349E+02	183.45	
PA-234M	4.47E+09Y	1.00	2.645E+01	2.645E+01	1.942E+01	73.41	
TH-234	4.47E+09Y	1.00	2.363E+01	2.363E+01	0.454E+01	19.23	
U-235	7.04E+08Y	1.00	3.227E+00	3.227E+00	1.441E+00	44.67	
Total Activity :			5.155E+02	5.156E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
CD-109	464.00D	1.05	5.240E+01	5.478E+01	0.814E+01	14.87	
SN-126	1.00E+05Y	1.00	5.267E+00	5.267E+00	0.717E+00	13.61	
CS-137	30.17Y	1.00	2.035E-01	2.039E-01	1.481E-01	72.61	
NP-237	2.14E+06Y	1.00	1.546E+01	1.546E+01	0.209E+01	13.53	
Total Activity :			7.333E+01	7.571E+01			

Grand Total Activity : 5.888E+02 5.913E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma %Error	Status
				pCi/gram	pCi/gram		
K-40	1460.81	10.67*	5.045E-01	1.358E+01	1.358E+01	19.47	OK
Final Mean for 1 Valid Peaks = 1.358E+01+/- 2.645E+00 (19.47%)							
PB-210	46.50	4.25*	2.577E+00	3.779E+01	3.789E+01	13.40	OK
Final Mean for 1 Valid Peaks = 3.789E+01+/- 5.078E+00 (13.40%)							
PB-211	404.84	2.90*	1.415E+00	1.021E+01	1.021E+01	53.27	OK
	831.96	2.90	7.856E-01	9.657E+00	9.657E+00	54.01	OK
Final Mean for 2 Valid Peaks = 9.922E+00+/- 3.765E+00 (37.94%)							
BI-214	609.31	46.30*	1.017E+00	6.186E+01	6.186E+01	10.79	OK
	1120.29	15.10	6.174E-01	6.785E+01	6.785E+01	9.96	OK
	1764.49	15.80	4.419E-01	7.500E+01	7.500E+01	10.62	OK
	2204.22	4.98	3.841E-01	6.715E+01	6.715E+01	13.05	OK
Final Mean for 4 Valid Peaks = 6.743E+01+/- 3.698E+00 (5.48%)							
PB-214	295.21	19.19	1.787E+00	6.654E+01	6.654E+01	29.29	OK
	351.92	37.19*	1.574E+00	6.764E+01	6.764E+01	19.75	OK
Final Mean for 2 Valid Peaks = 6.729E+01+/- 1.102E+01 (16.38%)							
RN-219	401.80	6.50*	1.423E+00	5.518E+00	5.518E+00	43.95	OK
Final Mean for 1 Valid Peaks = 5.518E+00+/- 2.425E+00 (43.95%)							
RA-223	323.87	3.88*	1.674E+00	4.530E+00	4.530E+00	68.33	OK
Final Mean for 1 Valid Peaks = 4.530E+00+/- 3.096E+00 (68.33%)							
RA-224	240.98	3.95*	2.045E+00	1.281E+02	1.281E+02	23.06	OK
Final Mean for 1 Valid Peaks = 1.281E+02+/- 2.954E+01 (23.06%)							
RA-226	186.21	3.28*	2.369E+00	1.280E+02	1.280E+02	183.45	OK
Final Mean for 1 Valid Peaks = 1.280E+02+/- 2.349E+02 (183.45%)							
PA-234M	1001.03	0.92*	6.754E-01	2.645E+01	2.645E+01	73.41	OK
Final Mean for 1 Valid Peaks = 2.645E+01+/- 1.942E+01 (73.41%)							
TH-234	63.29	3.80*	2.882E+00	2.363E+01	2.363E+01	19.23	OK
Final Mean for 1 Valid Peaks = 2.363E+01+/- 4.544E+00 (19.23%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/gram	pCi/gram	%Error	
U-235	143.76	10.50*	2.659E+00	3.098E+00	3.098E+00	54.66	OK
	163.35	4.70	2.523E+00	----- Line Not Found -----			Absent
	205.31	4.70	2.248E+00	3.565E+00	3.565E+00	77.04	OK

Final Mean for 2 Valid Peaks = 3.227E+00+/- 1.441E+00 (44.67%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/gram	pCi/gram	%Error	
CD-109	88.03	3.72*	2.962E+00	5.240E+01	5.478E+01	14.87	OK

Final Mean for 1 Valid Peaks = 5.478E+01+/- 8.142E+00 (14.87%)

SN-126	87.57	37.00*	2.963E+00	5.267E+00	5.267E+00	13.61	OK
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Final Mean for 1 Valid Peaks = 5.267E+00+/- 7.166E-01 (13.61%)

CS-137	661.65	85.12*	9.499E-01	2.035E-01	2.039E-01	72.61	OK
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Final Mean for 1 Valid Peaks = 2.039E-01+/- 1.481E-01 (72.61%)

NP-237	86.50	12.60*	2.964E+00	1.546E+01	1.546E+01	13.53	OK
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Final Mean for 1 Valid Peaks = 1.546E+01+/- 2.092E+00 (13.53%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	1.358E+01	2.645E+00	2.153E+00	2.080E-01	6.308
CD-109	5.478E+01	8.142E+00	5.762E+00	6.496E-01	9.506
SN-126	5.267E+00	7.166E-01	5.540E-01	5.291E-02	9.508
CS-137	2.039E-01	1.481E-01	1.886E-01	1.750E-02	1.081
PB-210	3.789E+01	5.078E+00	4.395E+00	3.466E-01	8.622
PB-211	9.922E+00	3.765E+00	6.305E+00	6.711E-01	1.574
BI-214	6.743E+01	3.698E+00	3.685E-01	3.650E-02	182.977
PB-214	6.729E+01	1.102E+01	4.631E-01	8.935E-02	145.303
RN-219	5.518E+00	2.425E+00	2.795E+00	2.972E-01	1.974
RA-223	4.530E+00	3.096E+00	4.527E+00	1.108E+00	1.001
RA-224	1.281E+02	2.954E+01	4.647E+00	1.046E+00	27.566
RA-226	1.280E+02	2.349E+02	5.920E+00	1.085E+01	21.628
PA-234M	2.645E+01	1.942E+01	2.283E+01	1.975E+00	1.159
TH-234	2.363E+01	4.544E+00	5.586E+00	4.147E-01	4.230
U-235	3.227E+00	1.441E+00	1.798E+00	3.294E-01	1.795
NP-237	1.546E+01	2.092E+00	1.625E+00	1.535E-01	9.512

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	6.418E-01		1.929E+00	2.424E+00	2.594E-01	0.265
NA-22	-1.635E-02		1.370E-01	2.044E-01	1.827E-02	-0.080
AL-26	-2.582E-03		8.202E-02	1.390E-01	1.270E-02	-0.019
TI-44	2.341E-01	+	1.645E-01	2.398E-01	1.863E-02	0.976
SC-46	-3.750E-02		1.580E-01	2.661E-01	2.329E-02	-0.141
V-48	1.022E-01		4.473E-01	7.616E-01	6.607E-02	0.134
CR-51	5.472E-01		2.567E+00	3.713E+00	9.385E-01	0.147
MN-54	2.281E-01		1.616E-01	2.107E-01	1.898E-02	1.082
CO-56	-5.481E-02		1.709E-01	2.571E-01	2.303E-02	-0.213
CO-57	7.590E-02		1.359E-01	2.189E-01	2.433E-02	0.347
CO-58	1.322E-03		1.627E-01	2.487E-01	2.267E-02	0.005
FE-59	9.305E-02		3.357E-01	5.721E-01	5.242E-02	0.163
CO-60	2.560E-01	+	2.494E-01	2.231E-01	1.828E-02	1.148
ZN-65	6.179E-01		3.155E-01	5.064E-01	4.258E-02	1.220
SE-75	-1.300E-01		2.758E-01	3.424E-01	9.490E-02	-0.380
RB-82	9.902E-01		2.443E+00	3.044E+00	2.797E-01	0.325
RB-83	-1.663E-02		2.747E-01	4.521E-01	7.591E-02	-0.037
KR-85	3.968E+01		2.554E+01	4.065E+01	4.310E+00	0.976
SR-85	2.369E-01		1.525E-01	2.427E-01	2.573E-02	0.976
Y-88	2.631E-01		1.153E-01	2.189E-01	1.988E-02	1.202
NB-93M	-2.817E+01		7.083E+00	1.227E+00	2.970E-01	-22.951
NB-94	5.584E-02		1.204E-01	2.067E-01	1.829E-02	0.270
NB-95	3.798E+00		4.825E-01	5.845E-01	5.389E-02	6.497
ZR-95	-6.117E-02		2.909E-01	4.421E-01	4.443E-02	-0.138
RU-103	-1.355E-01		1.990E-01	3.015E-01	4.670E-02	-0.449
RU-106	-8.755E-01		1.011E+00	1.684E+00	2.379E-01	-0.520
AG-108M	2.679E-02		1.161E-01	1.996E-01	1.850E-02	0.134

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
AG-110M	5.029E-02		1.192E-01	1.867E-01	1.739E-02	0.269
SN-113	1.196E-01		2.337E-01	3.383E-01	3.658E-02	0.353
TE123M	-2.076E-02		1.840E-01	2.698E-01	2.554E-02	-0.077
SB-124	3.874E-02		1.653E-01	2.568E-01	2.562E-02	0.151
I-125	-4.876E+00		2.523E+00	3.971E+00	3.732E-01	-1.228
SB-125	5.618E-01	+	4.660E-01	6.616E-01	7.169E-02	0.849
SB-126	1.465E+00		1.066E+00	1.867E+00	1.732E-01	0.784
SB-127	1.704E+00		5.707E+01	9.790E+01	9.085E+00	0.017
I-129	-7.796E-02		2.236E-01	3.663E-01	4.023E-02	-0.213
I-131	-3.444E-01		1.511E+00	2.611E+00	4.366E-01	-0.132
BA-133	7.405E-02		1.801E-01	2.833E-01	5.952E-02	0.261
CS-134	2.136E-01		1.296E-01	2.058E-01	2.053E-02	1.038
CS-135	4.377E+00		1.462E+00	1.262E+00	3.599E-01	3.469
CS-136	8.106E-02		8.120E-01	1.232E+00	1.089E-01	0.066
LA-138	-9.329E-02		2.147E-01	3.121E-01	2.945E-02	-0.299
CE-139	1.158E-02		1.712E-01	2.730E-01	2.492E-02	0.042
BA-140	-8.771E-01		2.235E+00	3.392E+00	1.142E+00	-0.259
LA-140	1.518E+00		8.140E-01	1.309E+00	1.232E-01	1.159
CE-141	8.711E-01		5.546E-01	7.653E-01	1.901E-01	1.138
CE-144	1.167E-01		1.113E+00	1.785E+00	1.895E-01	0.065
PM-144	8.756E-02		1.204E-01	1.892E-01	1.758E-02	0.463
PM-145	-2.439E-01		5.404E-01	8.430E-01	5.493E-01	-0.289
PM-146	6.125E-01	+	3.550E-01	4.571E-01	4.901E-02	1.340
ND-147	6.374E+00		5.502E+00	8.724E+00	9.179E-01	0.731
EU-152	1.164E+01	+	1.907E+00	2.521E+00	2.914E-01	4.617
GD-153	-5.627E-01		5.107E-01	8.077E-01	8.222E-02	-0.697
EU-154	1.724E-01		3.675E-01	5.662E-01	5.059E-02	0.305
EU-155	6.376E+00	+	8.627E-01	7.888E-01	7.449E-02	8.083
EU-156	-1.343E+00		4.500E+00	6.780E+00	1.561E+00	-0.198
HO-166M	4.121E-03		2.025E-01	3.309E-01	3.071E-02	0.012
HF-172	-3.470E-01		9.961E-01	1.591E+00	1.741E-01	-0.218
LU-172	4.556E-01		4.617E+00	7.001E+00	5.926E-01	0.065
LU-173	3.727E+00		1.255E+00	1.012E+00	2.978E-01	3.684
HF-175	-1.817E-01		1.908E-01	2.874E-01	6.022E-02	-0.632
LU-176	-9.904E-02		1.213E-01	1.831E-01	4.990E-02	-0.541
TA-182	3.515E+01	+	3.499E+00	2.498E+00	2.094E-01	14.072
IR-192	1.172E-01		3.711E-01	4.664E-01	4.998E-02	0.251
HG-203	-1.207E-01		2.522E-01	3.576E-01	1.115E-01	-0.338
BI-207	5.635E-03		1.033E-01	1.777E-01	1.825E-02	0.032
TL-208	3.888E-01		3.859E-01	6.107E-01	6.203E-02	0.637
BI-210M	4.957E-01		3.301E-01	3.965E-01	1.074E-01	1.250
BI-212	-1.333E-01		8.576E-01	1.461E+00	1.354E-01	-0.091
PB-212	1.128E+00		3.707E-01	4.516E-01	9.946E-02	2.497
RA-225	1.761E+00		1.545E+00	2.361E+00	2.034E-01	0.746
TH-227	3.723E+00	+	1.224E+00	1.740E+00	3.737E-01	2.140
AC-228	1.241E-01		5.203E-01	7.970E-01	6.940E-02	0.156
TH-230	5.971E+01	+	4.195E+01	6.108E+01	4.737E+00	0.978
PA-231	7.108E+00		5.619E+00	7.792E+00	2.171E+00	0.912

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
TH-231	3.737E-01		1.009E+00	1.669E+00	2.152E-01	0.224
PA-233	1.093E-01		6.063E-01	9.538E-01	3.204E-01	0.115
PA-234	-3.180E-01		5.465E-01	8.687E-01	9.309E-02	-0.366
AM-241	9.224E-01		4.373E-01	5.839E-01	4.182E-02	1.580
AM-243	1.067E+01		1.031E+00	5.134E-01	4.280E-02	20.782
CM-243	2.874E-01		8.905E-01	1.290E+00	3.966E-01	0.223

Summary of Nuclide Activity

Page : 10

Sample ID : 1303013-08

Acquisition date : 1-APR-2013 14:38:02

Total number of lines in spectrum 110
 Number of unidentified lines 69
 Number of lines tentatively identified by NID 41 37.27%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.358E+01	1.358E+01	0.264E+01	19.47	
PB-210	22.26Y	1.00	3.779E+01	3.789E+01	0.508E+01	13.40	
PB-211	3.28E+04Y	1.00	9.922E+00	9.922E+00	3.765E+00	37.94	
BI-214	1602.00Y	1.00	6.743E+01	6.743E+01	0.370E+01	5.48	
PB-214	1602.00Y	1.00	6.728E+01	6.729E+01	1.102E+01	16.38	
RN-219	3.28E+04Y	1.00	5.518E+00	5.518E+00	2.425E+00	43.95	
RA-223	3.28E+04Y	1.00	4.530E+00	4.530E+00	3.096E+00	68.33	
RA-224	1.41E+10Y	1.00	1.281E+02	1.281E+02	0.295E+02	23.06	
RA-226	1602.00Y	1.00	1.280E+02	1.280E+02	2.349E+02	183.45	
PA-234M	4.47E+09Y	1.00	2.645E+01	2.645E+01	1.942E+01	73.41	
TH-234	4.47E+09Y	1.00	2.363E+01	2.363E+01	0.454E+01	19.23	
U-235	7.04E+08Y	1.00	3.227E+00	3.227E+00	1.441E+00	44.67	
Total Activity :			5.155E+02	5.156E+02			

Nuclide Type : FISSION

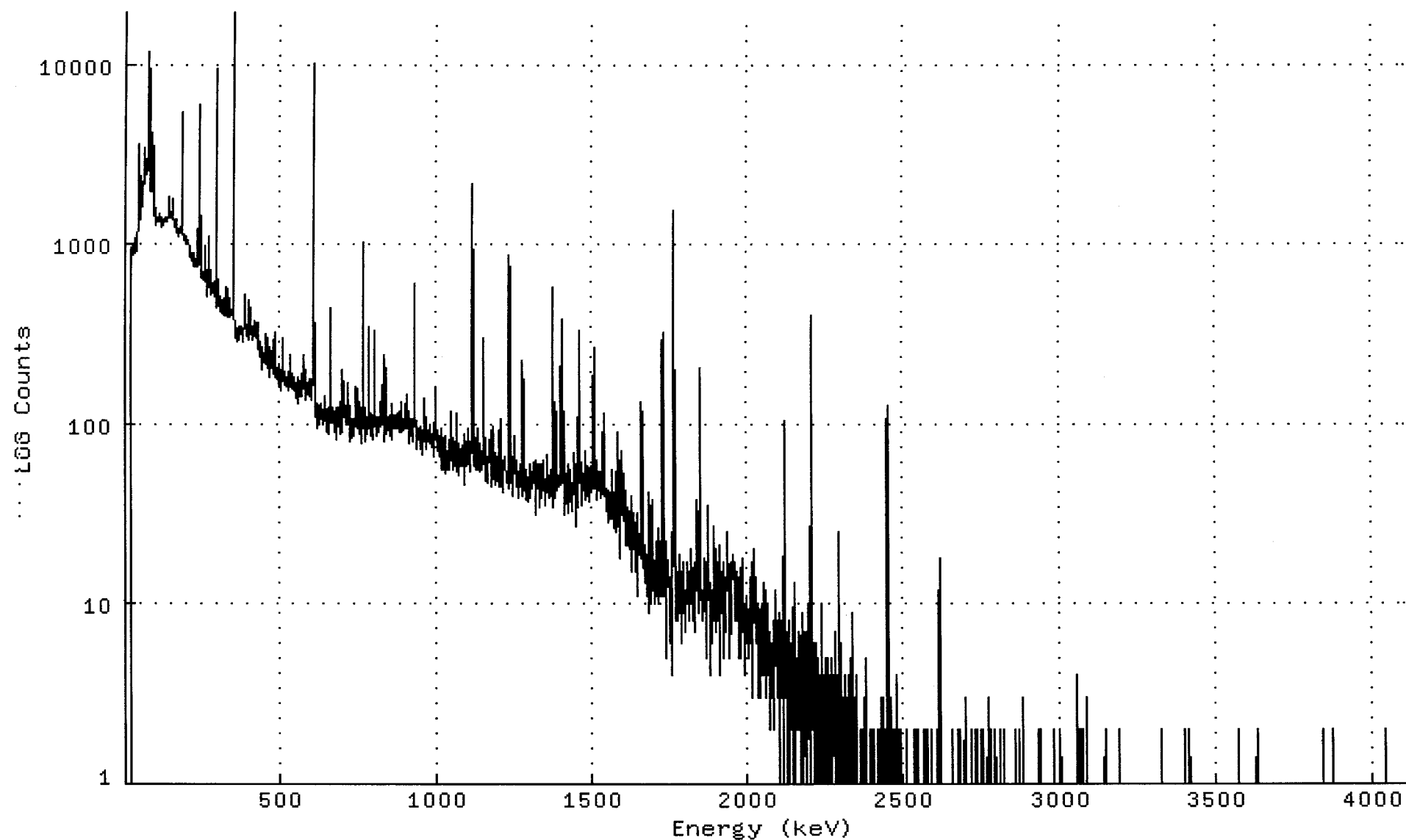
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CD-109	464.00D	1.05	5.240E+01	5.478E+01	0.814E+01	14.87	
SN-126	1.00E+05Y	1.00	5.267E+00	5.267E+00	0.717E+00	13.61	
CS-137	30.17Y	1.00	2.035E-01	2.039E-01	1.481E-01	72.61	
NP-237	2.14E+06Y	1.00	1.546E+01	1.546E+01	0.209E+01	13.53	
Total Activity :			7.333E+01	7.571E+01			

Grand Total Activity : 5.888E+02 5.913E+02

Flags: "K" = Keyline not found
 "E" = Manually edited

"M" = Manually accepted
 "A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301308_GE1_GAS1202_190135.CNF;1
Title :
Sample Title: MQZ-52-130303
Start Time: 1-APR-2013 14:38: Sample Time: 3-MAR-2013 00:00: Energy Offset: -2.35223E-01
Real Time : 0 01:00:18.00 Sample ID : 1303013-08 Energy Slope : 1.00007E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301308_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	1	0	698	950	922	930	945	866
25:	880	953	972	942	879	870	902	1074
33:	912	895	910	997	1001	1015	1072	1121
41:	1171	1202	1214	1272	1384	2713	3549	1409
49:	1356	1754	1564	1552	2381	2060	1625	1604
57:	1761	1898	2045	2130	2248	2326	3409	3247
65:	2378	2419	2492	2904	2470	2535	2433	2523
73:	2700	3506	9075	4367	11618	7502	2570	2724
81:	2607	2141	1942	3684	2230	1923	4135	4003
89:	1964	2893	1933	2141	3467	1894	1963	1457
97:	1310	1563	1438	1313	1250	1299	1331	1338
105:	1311	1311	1372	1359	1393	1321	1456	1385
113:	1472	1411	1401	1243	1310	1314	1331	1351
121:	1269	1367	1333	1370	1311	1278	1310	1372
129:	1350	1315	1333	1333	1313	1339	1353	1387
137:	1322	1355	1320	1430	1389	1476	1467	1797
145:	1518	1393	1401	1372	1482	1373	1417	1371
153:	1460	1746	1609	1463	1393	1327	1349	1300
161:	1223	1255	1280	1345	1245	1211	1182	1184
169:	1151	1215	1141	1151	1187	1095	1126	1188
177:	1185	1155	1201	1182	1237	1182	1187	1185
185:	1532	5299	4055	1173	1046	1123	1042	1052
193:	1131	1049	1066	1097	1038	1095	1023	1082
201:	987	1027	1009	996	1018	1036	923	888
209:	830	879	903	900	875	873	804	845
217:	823	823	886	794	747	810	808	855
225:	785	824	775	735	819	793	799	813
233:	782	750	814	1197	958	757	926	763
241:	1159	5824	2790	724	647	644	677	669
249:	657	682	642	643	663	668	635	761
257:	768	710	962	742	617	606	601	578
265:	580	508	590	610	845	1104	917	800
273:	575	665	715	657	579	581	523	545
281:	601	531	561	595	594	592	611	543
289:	531	574	534	504	503	1064	9295	7868
297:	755	443	468	622	512	446	542	512
305:	499	460	456	432	431	422	444	410
313:	462	468	478	436	454	461	423	463
321:	442	396	429	569	484	398	424	415
329:	457	551	496	434	391	492	464	431
337:	391	489	453	425	404	431	432	419
345:	401	401	409	422	477	524	3857	19530
353:	6981	469	300	334	334	317	339	346
361:	323	340	321	284	326	306	341	306
369:	318	293	330	318	316	317	316	323
377:	317	343	336	308	310	283	311	315
385:	356	373	445	355	514	376	314	351
393:	325	350	303	351	293	342	323	315
401:	395	482	418	362	433	438	344	330
409:	313	296	345	315	323	292	332	323
417:	303	315	352	366	348	344	355	333
425:	328	298	359	363	323	274	271	270

433:	261	282	266	258	261	269	235	248
441:	247	248	198	251	263	264	232	237
449:	247	229	231	220	262	249	315	272
457:	215	219	202	217	238	301	232	237
465:	218	204	179	229	206	263	244	225
473:	208	225	240	212	191	188	199	287
481:	293	197	202	217	180	210	319	281
489:	209	175	202	191	187	196	177	167
497:	172	185	162	165	212	177	196	152
505:	169	182	184	170	201	287	297	254
513:	215	182	178	170	167	179	165	163
521:	168	158	182	159	180	168	151	164
529:	193	184	163	183	193	239	215	161
537:	180	164	160	157	159	189	184	182
545:	182	170	177	165	152	164	169	147
553:	164	169	153	139	182	147	148	130
561:	147	147	149	152	145	152	142	171
569:	159	143	157	172	190	158	161	179
577:	156	174	161	241	240	163	159	160
585:	175	136	135	148	161	167	147	150
593:	156	150	159	143	146	140	175	142
601:	164	136	143	150	174	167	165	1243
609:	9991	9919	1062	126	119	123	125	120
617:	132	122	95	106	115	128	96	106
625:	110	126	126	98	99	115	109	127
633:	108	127	124	108	98	102	120	101
641:	111	103	117	104	125	122	143	115
649:	119	107	117	90	114	95	116	95
657:	88	95	117	115	135	115	107	101
665:	346	441	151	100	110	102	102	103
673:	107	102	99	89	106	114	112	122
681:	91	82	112	123	106	97	97	108
689:	121	108	116	117	88	115	123	99
697:	123	145	90	103	121	138	197	153
705:	114	110	109	126	120	113	114	99
713:	120	114	120	124	99	105	134	169
721:	127	98	120	125	79	108	103	116
729:	95	100	83	90	97	107	86	96
737:	103	96	96	105	102	134	161	105
745:	111	96	103	103	95	99	97	130
753:	156	110	87	104	106	98	97	85
761:	101	91	110	77	97	154	236	958
769:	1024	247	93	121	79	104	93	99
777:	86	87	97	103	96	105	107	112
785:	175	344	226	107	95	92	95	99
793:	96	114	113	86	90	81	95	110
801:	100	87	104	100	123	330	278	119
809:	100	85	98	93	87	93	89	100
817:	91	93	107	94	126	124	118	115
825:	97	129	138	106	98	106	130	164
833:	119	94	79	82	100	138	241	176
841:	101	120	96	87	101	105	109	98
849:	92	108	103	110	104	86	94	97
857:	96	100	82	130	101	96	108	110
865:	95	94	96	106	107	96	106	95
873:	110	112	98	115	93	103	102	100
881:	99	108	103	116	94	113	90	100
889:	132	101	90	95	101	111	91	95
897:	100	94	107	91	93	110	114	113
905:	128	97	106	95	107	102	144	114

913:	93	94	102	117	95	78	107	95
921:	98	85	97	97	107	79	96	98
929:	91	104	101	100	219	601	445	130
937:	107	86	87	72	95	84	103	86
945:	81	89	95	82	90	74	75	77
953:	97	72	92	79	67	91	74	91
961:	81	98	108	139	128	88	80	83
969:	107	81	109	73	97	81	88	89
977:	87	91	90	80	86	78	82	88
985:	96	88	77	82	74	85	83	77
993:	101	82	80	66	72	82	84	86
1001:	159	106	84	82	91	87	92	70
1009:	81	83	86	74	71	77	69	66
1017:	79	88	76	56	75	93	78	84
1025:	63	78	79	65	55	72	53	83
1033:	85	75	72	55	58	59	69	61
1041:	70	55	82	75	59	74	77	69
1049:	83	62	81	118	94	74	74	57
1057:	71	72	65	56	69	67	58	78
1065:	79	77	75	54	73	113	80	61
1073:	51	77	58	74	63	58	66	67
1081:	58	63	69	73	58	62	75	73
1089:	67	67	55	46	70	65	72	88
1097:	66	58	68	64	72	64	69	94
1105:	87	84	66	60	66	71	54	69
1113:	66	80	65	69	76	79	471	2129
1121:	1955	437	76	68	68	75	58	71
1129:	73	57	56	76	76	94	79	62
1137:	66	74	55	63	77	70	61	54
1145:	72	78	60	62	60	56	65	70
1153:	73	118	297	232	91	59	84	64
1161:	61	63	48	55	58	50	47	52
1169:	57	62	71	82	75	64	61	61
1177:	65	45	55	53	66	90	96	55
1185:	60	49	62	62	52	46	68	59
1193:	61	54	54	48	54	52	66	66
1201:	57	57	45	53	56	69	80	105
1209:	79	45	58	57	62	42	53	45
1217:	54	63	62	63	56	59	65	55
1225:	62	47	52	50	49	51	51	53
1233:	52	51	44	75	245	855	637	161
1241:	59	48	49	53	40	47	65	53
1249:	51	50	54	58	86	86	60	56
1257:	48	45	57	50	47	62	44	54
1265:	52	46	47	39	49	49	60	52
1273:	51	45	58	40	41	61	54	123
1281:	222	138	57	50	46	45	43	49
1289:	55	47	47	49	38	37	46	50
1297:	44	41	49	39	44	55	53	51
1305:	60	49	53	44	44	47	54	50
1313:	47	54	59	55	60	63	41	54
1321:	31	43	42	53	57	48	44	56
1329:	54	59	51	46	34	44	45	60
1337:	53	46	39	46	60	49	56	48
1345:	43	47	63	47	49	44	38	37
1353:	35	47	47	67	51	55	44	42
1361:	52	44	46	39	50	41	41	47
1369:	44	56	54	41	44	34	48	85
1377:	392	571	266	65	55	39	45	62
1385:	129	107	65	48	44	43	47	47

1393:	47	45	46	45	52	46	49	75
1401:	186	209	112	59	47	61	163	379
1409:	226	61	31	56	46	41	49	63
1417:	43	36	44	53	50	48	40	33
1425:	60	54	32	50	37	37	41	41
1433:	53	55	33	35	33	47	38	38
1441:	42	69	45	45	50	44	42	60
1449:	45	27	46	46	34	55	52	42
1457:	49	43	62	192	329	181	54	50
1465:	47	61	40	55	45	56	35	49
1473:	44	48	47	53	46	46	57	71
1481:	38	44	38	56	43	40	53	58
1489:	54	48	57	49	37	48	46	58
1497:	42	44	46	58	47	50	57	44
1505:	52	55	55	131	267	246	102	51
1513:	47	44	62	38	47	51	49	41
1521:	48	49	52	54	47	43	43	49
1529:	39	53	54	47	41	48	51	58
1537:	58	73	115	47	45	46	92	90
1545:	42	37	35	33	44	34	41	38
1553:	28	37	43	36	37	38	30	31
1561:	40	35	32	56	40	35	37	43
1569:	30	31	42	31	31	31	26	31
1577:	30	43	28	25	54	51	86	90
1585:	39	34	33	40	18	32	30	29
1593:	33	55	71	48	31	42	69	58
1601:	49	29	30	42	36	37	43	40
1609:	28	26	25	21	27	31	23	26
1617:	21	34	25	33	20	27	22	20
1625:	26	19	24	19	17	15	40	26
1633:	20	28	28	20	31	20	15	28
1641:	24	19	20	19	22	32	15	11
1649:	27	23	21	21	19	21	21	18
1657:	20	20	23	71	133	105	44	16
1665:	25	20	23	17	15	13	21	17
1673:	15	11	18	17	17	13	19	14
1681:	16	9	21	42	29	18	15	21
1689:	17	10	26	33	38	34	28	12
1697:	19	15	10	11	16	11	10	17
1705:	18	13	22	14	11	12	22	26
1713:	19	21	11	10	12	18	14	17
1721:	15	16	22	11	15	16	19	61
1729:	267	321	146	36	14	18	11	16
1737:	11	14	5	15	22	14	16	13
1745:	14	15	15	10	9	6	8	14
1753:	13	13	25	4	12	15	15	17
1761:	18	52	425	1352	1521	544	73	19
1769:	9	8	11	11	10	12	11	15
1777:	8	10	9	13	16	13	19	9
1785:	12	12	6	9	13	15	15	17
1793:	12	9	13	10	8	10	7	7
1801:	12	12	10	12	11	13	12	17
1809:	14	10	8	13	15	11	15	10
1817:	20	13	11	15	14	16	12	12
1825:	8	15	13	7	8	17	7	7
1833:	13	13	14	12	23	31	38	17
1841:	11	12	17	9	14	75	197	201
1849:	57	21	14	12	9	11	10	9
1857:	12	8	10	18	11	12	12	14
1865:	14	16	5	17	7	10	11	27

1873:	35	17	12	15	7	13	4	6
1881:	11	10	12	8	8	9	10	6
1889:	18	27	17	12	9	8	20	20
1897:	17	13	7	20	15	9	10	8
1905:	12	14	17	4	11	9	8	21
1913:	8	11	9	11	11	15	10	14
1921:	5	17	9	10	15	8	11	9
1929:	9	7	14	12	12	18	21	16
1937:	25	11	12	8	9	12	14	5
1945:	9	11	15	11	7	17	14	14
1953:	15	19	14	15	12	8	12	12
1961:	13	17	13	8	15	12	11	13
1969:	11	9	11	14	5	9	11	16
1977:	5	15	12	10	18	8	7	8
1985:	10	11	8	10	5	7	4	6
1993:	7	8	6	11	8	10	10	9
2001:	5	7	8	6	7	6	7	9
2009:	9	14	14	13	3	9	8	17
2017:	13	20	12	8	8	11	10	6
2025:	6	6	10	9	6	14	6	10
2033:	3	5	4	10	9	5	3	6
2041:	4	8	9	7	7	10	4	4
2049:	6	5	4	13	13	9	12	3
2057:	5	6	5	5	4	6	6	4
2065:	9	10	2	5	7	7	6	7
2073:	2	6	5	3	4	5	5	4
2081:	2	8	3	5	7	6	5	6
2089:	7	12	5	4	3	5	4	4
2097:	8	3	6	6	1	9	7	4
2105:	5	8	3	7	5	13	5	2
2113:	2	0	4	9	39	104	101	37
2121:	7	3	7	3	1	6	1	6
2129:	7	8	1	3	8	7	3	2
2137:	2	4	3	6	3	3	4	1
2145:	5	7	13	6	6	8	1	3
2153:	3	4	2	3	5	3	5	5
2161:	7	2	5	2	4	5	4	4
2169:	1	2	5	9	6	1	4	3
2177:	1	2	6	5	3	4	7	3
2185:	4	5	4	0	7	5	4	5
2193:	10	2	3	1	5	3	3	2
2201:	13	57	219	393	233	71	6	2
2209:	6	1	6	1	2	5	1	3
2217:	3	1	6	4	1	4	2	5
2225:	5	3	4	4	1	2	2	1
2233:	10	1	2	2	4	1	4	2
2241:	0	1	1	3	4	2	5	1
2249:	1	2	5	2	0	1	5	1
2257:	3	4	3	1	2	3	1	1
2265:	5	1	5	2	3	4	3	4
2273:	2	3	2	0	7	1	1	5
2281:	1	3	4	3	1	3	2	3
2289:	1	2	5	15	25	16	2	6
2297:	2	2	0	1	0	3	2	2
2305:	3	1	4	3	0	1	1	1
2313:	0	1	3	3	3	3	1	1
2321:	2	0	4	0	1	1	5	1
2329:	1	1	9	5	3	3	3	3
2337:	1	1	0	3	2	2	0	2
2345:	3	4	1	1	0	0	1	1

2353:	1	0	1	1	1	0	2	0
2361:	1	1	2	1	0	1	2	1
2369:	3	2	1	2	1	2	0	0
2377:	5	2	2	0	0	0	1	1
2385:	1	1	0	1	0	2	1	0
2393:	1	2	0	0	1	1	1	1
2401:	2	0	1	1	0	1	0	0
2409:	1	0	1	0	2	1	0	0
2417:	2	2	0	0	0	1	1	0
2425:	0	3	0	0	0	1	3	2
2433:	3	0	0	0	2	0	2	2
2441:	0	1	2	3	7	43	91	124
2449:	30	9	1	1	2	1	0	3
2457:	0	1	1	1	1	0	2	0
2465:	1	2	0	0	1	1	1	0
2473:	0	4	1	0	0	0	0	0
2481:	1	1	2	1	0	2	1	1
2489:	0	1	0	1	1	0	1	0
2497:	0	1	1	0	0	1	0	2
2505:	1	0	1	0	1	0	1	1
2513:	1	0	0	0	0	0	1	0
2521:	1	0	1	0	0	0	1	0
2529:	2	0	1	2	0	0	2	0
2537:	2	0	1	2	0	2	1	1
2545:	1	0	0	0	0	0	0	0
2553:	0	0	0	0	0	1	1	2
2561:	0	1	1	0	0	0	2	0
2569:	0	0	0	2	2	1	2	0
2577:	0	1	0	0	1	1	0	2
2585:	0	0	0	0	0	0	0	0
2593:	1	0	1	0	0	0	1	0
2601:	0	0	1	2	1	1	1	0
2609:	1	0	1	3	8	18	18	5
2617:	2	1	0	0	0	0	1	0
2625:	1	0	0	0	0	0	0	0
2633:	0	1	0	1	1	0	0	1
2641:	0	1	0	1	0	0	1	0
2649:	0	1	1	2	0	1	0	0
2657:	0	0	0	1	1	0	0	0
2665:	0	1	1	0	0	0	2	0
2673:	0	0	0	0	0	0	2	0
2681:	0	0	1	1	0	0	1	1
2689:	0	0	1	1	0	3	1	1
2697:	0	1	0	1	1	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	1	0	0	2	0	0	0	0
2721:	1	0	0	1	0	0	0	2
2729:	2	2	0	0	1	0	0	0
2737:	0	0	1	1	0	0	0	0
2745:	0	1	0	2	0	1	0	2
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	1	0	1	2	3
2769:	1	1	1	0	0	0	1	0
2777:	0	2	0	1	0	0	0	0
2785:	0	0	0	1	0	0	2	0
2793:	0	1	1	1	0	0	1	0
2801:	0	0	0	0	0	0	2	1
2809:	0	0	0	0	0	1	0	0
2817:	2	0	0	1	1	1	0	0
2825:	0	0	0	1	0	0	0	0

2833:	0	0	0	0	0	0	0	0
2841:	0	0	0	0	0	0	0	1
2849:	0	0	0	0	0	1	1	2
2857:	0	0	1	0	0	0	0	0
2865:	0	0	2	0	0	0	0	0
2873:	0	1	0	0	0	0	3	1
2881:	0	0	0	0	0	0	0	0
2889:	1	0	1	1	1	1	0	0
2897:	0	0	0	1	1	0	0	1
2905:	0	0	0	0	0	0	0	0
2913:	0	0	0	1	1	0	0	0
2921:	0	0	1	1	0	1	1	0
2929:	2	0	0	1	0	0	2	0
2937:	0	0	0	0	0	0	1	0
2945:	0	0	0	0	0	0	0	0
2953:	0	1	0	1	0	1	0	0
2961:	0	1	0	0	0	1	0	0
2969:	0	0	0	1	1	0	0	0
2977:	1	2	0	2	0	1	1	0
2985:	0	0	0	0	1	0	0	0
2993:	0	0	0	0	0	0	1	2
3001:	0	1	1	1	1	0	0	0
3009:	0	0	0	1	0	0	0	0
3017:	1	0	0	0	0	0	0	0
3025:	0	1	0	0	0	0	0	1
3033:	0	0	1	0	0	0	0	1
3041:	0	0	0	0	0	0	0	1
3049:	0	0	2	0	3	4	1	0
3057:	0	0	0	2	0	1	0	0
3065:	0	1	2	0	0	0	1	2
3073:	0	0	0	0	1	0	1	0
3081:	0	0	0	0	3	0	0	1
3089:	0	0	0	0	0	0	0	0
3097:	0	0	1	0	0	1	0	0
3105:	0	1	0	1	1	0	0	0
3113:	0	1	0	0	0	0	0	0
3121:	0	0	0	0	0	0	1	0
3129:	0	0	0	1	0	0	1	0
3137:	0	0	0	0	0	2	2	0
3145:	0	0	0	0	0	0	0	1
3153:	0	0	0	0	0	0	0	1
3161:	0	0	0	0	1	0	0	0
3169:	0	0	0	0	0	0	0	0
3177:	0	0	1	0	0	1	0	0
3185:	0	2	0	0	0	0	0	1
3193:	0	0	0	0	0	0	0	0
3201:	1	0	0	0	0	0	0	1
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	1	0
3225:	1	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	1	0
3241:	0	0	1	0	0	0	0	0
3249:	1	0	0	1	0	0	0	0
3257:	0	0	0	0	0	1	0	0
3265:	1	0	0	1	1	0	0	1
3273:	0	0	0	1	0	1	0	0
3281:	0	0	0	0	0	0	0	1
3289:	1	0	0	0	0	0	0	0
3297:	0	0	1	0	0	0	0	1
3305:	0	0	0	0	0	0	0	0

3313:	0	0	0	0	0	0	0	0
3321:	0	1	2	0	0	0	0	0
3329:	0	0	0	0	0	1	0	0
3337:	1	0	0	0	0	0	1	1
3345:	0	0	0	0	1	0	0	0
3353:	0	0	0	0	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	1	0	0	0	0
3385:	0	0	0	0	0	1	0	0
3393:	0	0	2	0	0	0	0	0
3401:	0	0	0	0	0	0	0	0
3409:	0	0	2	0	0	0	0	0
3417:	1	0	0	0	0	0	0	0
3425:	0	0	0	0	1	0	1	0
3433:	1	1	0	0	0	0	0	0
3441:	0	0	1	0	1	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	1	0	0	1	0	0
3473:	0	0	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	0	0	0
3497:	0	1	0	0	0	0	0	0
3505:	0	0	0	0	1	0	0	0
3513:	0	1	1	0	0	0	0	0
3521:	0	0	0	0	1	0	0	0
3529:	1	1	0	0	0	0	0	0
3537:	0	0	0	0	1	1	0	0
3545:	1	0	0	0	1	1	0	0
3553:	0	0	1	0	0	0	0	1
3561:	0	0	0	0	0	0	0	0
3569:	2	2	0	0	1	0	0	0
3577:	0	0	0	0	0	1	0	0
3585:	0	1	0	0	0	0	0	0
3593:	0	0	1	0	0	1	1	0
3601:	0	0	0	0	0	1	0	0
3609:	0	0	1	0	0	0	0	0
3617:	0	0	0	0	0	0	0	0
3625:	0	0	2	0	0	0	0	1
3633:	1	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	1	0	1	0	0	1	0	0
3665:	0	1	0	0	0	0	0	0
3673:	1	0	0	0	0	1	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	1	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	1	0	0	0	1	0	0
3713:	0	0	0	0	0	0	1	0
3721:	0	0	0	0	0	1	0	0
3729:	0	1	0	1	0	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	1	0	1	0	1	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	1	0	0	0	0	0
3769:	0	0	0	0	0	0	1	0
3777:	0	0	0	0	0	0	1	1
3785:	0	0	0	0	0	0	0	0

3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	1	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0
3825:	1	0	1	0	0	0	0	0
3833:	0	1	1	0	2	0	0	0
3841:	0	0	0	0	1	0	0	1
3849:	1	0	0	1	0	0	0	0
3857:	0	0	0	1	0	0	0	0
3865:	0	0	0	0	2	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	1	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	1
3905:	0	0	0	0	0	0	1	0
3913:	1	0	0	0	0	0	1	0
3921:	0	0	0	0	0	0	1	0
3929:	0	1	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	1	0	1
3961:	0	1	0	0	0	0	0	0
3969:	0	0	0	1	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	1	1	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	1	0	0	0	0	1
4017:	0	0	0	1	0	0	0	0
4025:	0	1	0	0	0	0	0	0
4033:	0	0	0	2	0	0	0	1
4041:	0	0	0	0	0	1	1	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	1	0	0
4073:	0	0	1	0	0	0	0	0
4081:	0	0	0	1	0	1	0	0
4089:	0	0	0	0	0	0	0	0

11.113

Sample ID : 1303013-09

Acquisition date : 1-APR-2013 15:38:57

VAX/VMS Peak Search Report Generated 1-APR-2013 16:39:48.87

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301309_GE1_GAS1202_190139.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-61-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 15:38:57.
 Sample ID : 1303013-09 Sample Quantity : 5.65740E+02 gram
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE1 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:36.34 1.0%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	25.78*	291	9121	4.24	26.01	25	5	99.4		
0	46.37*	5052	11027	1.66	46.60	45	4	6.5		PB-210
0	52.69*	2230	20695	1.54	52.92	50	6	20.8		
0	63.13*	8654	29623	1.85	63.36	61	6	6.6		TH-234
8	67.77*	1669	9910	1.44	68.00	67	16	15.1	2.27E+03	
8	76.21*	60813	41692	3.11	76.44	67	16	1.4		
0	86.51*	3054	22064	1.52	86.74	86	4	13.8		NP-237 SN-126
0	92.70*	14158	26787	1.26	92.93	90	7	4.3		
0	98.22*	830	14152	2.43	98.45	98	5	43.8		
0	112.43*	842	14119	1.29	112.66	111	5	43.0		
0	143.59*	2032	16743	1.30	143.81	141	6	20.6		U-235
0	154.24	1078	16488	2.09	154.46	152	6	38.3		
0	163.28*	761	12166	1.94	163.50	162	5	44.2		U-235
0	186.00*	16198	20111	1.59	186.22	182	9	3.5		RA-226
0	205.53*	501	9202	1.70	205.75	204	5	58.2		U-235
2	235.88	1296	7514	1.54	236.10	233	14	20.5	3.46E+00	
2	238.78*	535	7308	1.61	239.00	233	14	50.5		PB-212
2	241.97*	15408	5533	1.38	242.19	233	14	2.1		RA-224
1	255.94	854	6227	1.78	256.16	253	10	28.3	4.46E+00	
1	258.68	1323	5944	1.79	258.90	253	10	18.8		
6	270.18	2515	10071	2.89	270.39	264	14	15.0	3.40E+00	
6	274.68	726	4398	1.36	274.90	264	14	27.1		
0	295.20*	33607	7256	1.84	295.41	292	7	1.4		PB-214
0	323.44	358	4202	1.28	323.65	322	5	55.4		RA-223
0	329.63	249	5216	1.09	329.84	328	6	92.7		
0	338.90*	206	4250	1.60	339.12	337	5	96.1		
0	351.87*	57590	6211	1.36	352.08	348	8	1.0		PB-214
0	388.09	865	5611	3.15	388.30	384	9	32.0		
1	401.62	680	4000	1.89	401.83	397	12	30.1	8.73E+00	RN-219
1	404.96	542	3969	1.89	405.17	397	12	38.4		PB-211
0	454.81	302	3146	1.59	455.02	452	7	62.8		
0	461.26	249	2684	1.57	461.46	459	6	67.1		
0	480.22	270	2522	1.59	480.42	478	6	60.1		
0	487.17	455	2666	1.87	487.37	484	7	38.9		
0	510.81*	583	3560	2.99	511.01	506	10	39.3		

AG
4/2/13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	543.52	136	2301	2.63	543.71	541	7118.6			
0	554.76	126	1818	1.69	554.95	553	6107.9			
0	580.14	263	1888	1.78	580.34	577	6	53.6		
3	604.95	175	1343	1.74	605.14	603	12	64.4	2.43E+00	
3	609.28*	42969	1287	1.57	609.47	603	12	1.0		BI-214
0	615.69	128	1327	3.46	615.88	614	6	91.8		
0	639.04	130	1045	1.68	639.23	637	5	76.5		
0	665.38	1287	1971	1.93	665.57	661	9	13.6		
0	703.40	360	2005	1.67	703.59	699	9	46.0		
0	719.67	293	1713	1.39	719.85	716	8	50.4		
0	743.25	445	2029	2.66	743.43	738	11	40.4		
0	753.26	108	1323	2.47	753.44	751		7113.1		
0	768.11	4187	2217	2.11	768.29	762	11	5.3		
0	785.90	902	1801	1.68	786.08	782	9	18.3		
0	806.17	968	1638	1.82	806.35	802	9	16.4		
1	826.63	140	1152	2.00	826.81	824	11	78.3	8.29E-01	
1	831.79	186	991	1.73	831.96	824	11	52.4		PB-211
0	838.74	509	1582	1.81	838.92	835	8	28.5		
0	934.02*	2112	1682	1.87	934.19	930	10	8.5		
0	963.93*	197	1364	2.05	964.10	961	8	66.4		
0	1001.02*	625	1371	1.75	1001.18	997	9	22.8		PA-234M
0	1052.10	209	894	2.18	1052.26	1049	7	49.4		
0	1069.27	195	1187	1.84	1069.43	1066	9	65.1		
0	1120.24*	9162	1502	2.09	1120.40	1114	12	2.7		BI-214
0	1133.69	131	867	1.85	1133.85	1131	7	76.5		
6	1148.42	167	1017	3.61	1148.57	1144	16	70.9	3.72E+00	
6	1155.15	991	703	2.02	1155.31	1144	16	10.5		
0	1207.47	320	910	1.74	1207.62	1203	9	35.9		
0	1238.11	3246	1005	1.99	1238.26	1233	10	5.1		
0	1253.56	240	764	2.85	1253.71	1250	8	42.0		
0	1281.25	698	1055	1.97	1281.40	1276	10	19.0		
0	1334.71	123	760	5.78	1334.85	1331	9	82.8		
2	1377.65*	2403	458	2.07	1377.79	1373	18	5.0	1.81E+00	
2	1385.46	472	558	2.56	1385.60	1373	18	20.2		
3	1401.48	702	613	2.18	1401.62	1397	17	13.7	2.16E+00	
3	1408.08	1310	547	2.20	1408.22	1397	17	8.1		
0	1460.87*	753	848	1.85	1461.01	1457	9	15.8		K-40
0	1509.09	1034	866	2.22	1509.22	1505	9	12.0		
3	1538.70	230	723	2.88	1538.82	1532	16	45.5	6.24E-01	
3	1543.35	277	516	2.17	1543.47	1532	16	31.0		
0	1584.03	373	689	2.12	1584.15	1578	11	29.3		
2	1594.66	198	415	2.63	1594.78	1591	14	38.7	1.49E+00	
2	1599.31	183	429	2.53	1599.43	1591	14	42.2		
0	1608.29	113	509	3.12	1608.41	1605	10	77.6		
0	1661.26	525	316	2.18	1661.37	1657	8	14.6		
1	1684.01	139	227	2.67	1684.13	1680	20	41.2	6.64E-01	
1	1692.84	191	264	3.03	1692.96	1680	20	34.1		
0	1729.55	1604	333	2.45	1729.67	1725	11	6.7		
0	1764.48*	7521	318	2.33	1764.59	1759	13	2.5		BI-214
3	1835.18	29	42	2.72	1835.29	1834	23	59.2	1.86E+00	
3	1838.39	150	146	2.39	1838.50	1834	23	31.2		

Sample ID : 1303013-09

Acquisition date : 1-APR-2013 15:38:57

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
3	1847.38	1015	141	2.36	1847.48	1834	23	7.4		
0	1863.30	55	157	3.42	1863.40	1859	9	86.7		
9	1869.19	15	35	2.14	1869.29	1868	10107.9		2.56E+00	
9	1873.29	130	157	2.81	1873.39	1868	10	37.8		
2	1895.99	52	73	1.86	1896.09	1894	9	54.8	8.86E-01	
2	1898.62	41	159	2.74	1898.72	1894		9114.5		
0	1935.33	82	254	5.44	1935.43	1930	12	80.2		
0	2010.35	48	79	2.53	2010.44	2008	6	64.4		
0	2017.30	41	130	1.25	2017.40	2014		8101.9		
0	2052.40	42	83	3.05	2052.49	2049	9	84.4		
4	2104.55	30	38	3.39	2104.64	2103	21	59.6	4.79E+00	
4	2118.41*	504	66	2.52	2118.50	2103	21	10.5		
3	2147.68	22	43	3.09	2147.77	2144	12106.1		1.08E+00	
3	2152.15	16	45	3.10	2152.23	2144	12152.9			
0	2195.01	29	70	3.93	2195.09	2188	10113.1			
0	2203.98	2005	64	2.40	2204.06	2198	13	4.8		BI-214
0	2293.51	128	29	2.57	2293.58	2289	11	24.2		
0	2447.48	565	14	2.55	2447.54	2442	11	8.8		
0	2504.06	8	2	1.25	2504.12	2500	7	85.5		
0	2614.56*	54	0	2.89	2614.62	2611	10	28.6		
1	2694.20	17	3	2.70	2694.25	2691	10	50.0	2.59E+00	
1	2697.20	6	4	2.70	2697.25	2691	10170.2			
0	2728.12	6	4	1.79	2728.17	2723		8141.4		
0	2770.38	7	1	1.39	2770.42	2766		7101.4		
0	2998.79	11	0	4.15	2998.82	2995	8	60.3		
0	3053.10	6	2	1.97	3053.13	3049		8115.5		

Summary of Nuclide Activity
Sample ID : 1303013-09

Page : 4
Acquisition date : 1-APR-2013 15:38:57

Total number of lines in spectrum 112
Number of unidentified lines 68
Number of lines tentatively identified by NID 44 39.29%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.855E+01	1.855E+01	0.351E+01	18.94	
PB-210	22.26Y	1.00	6.121E+01	6.136E+01	0.674E+01	10.98	
PB-211	3.28E+04Y	1.00	1.352E+01	1.352E+01	0.446E+01	32.96	
PB-212	1.41E+10Y	1.00	7.734E-01	7.734E-01	4.271E-01	55.23	
BI-214	1602.00Y	1.00	1.320E+02	1.321E+02	0.070E+02	5.30	
PB-214	1602.00Y	1.00	1.304E+02	1.304E+02	0.213E+02	16.36	
RN-219	3.28E+04Y	1.00	9.760E+00	9.760E+00	3.140E+00	32.18	
RA-223	3.28E+04Y	1.00	7.311E+00	7.311E+00	4.435E+00	60.66	
RA-224	1.41E+10Y	1.00	2.532E+02	2.532E+02	0.581E+02	22.96	
RA-226	1602.00Y	1.00	2.766E+02	2.766E+02	5.074E+02	183.42	
PA-234M	4.47E+09Y	1.00	1.335E+02	1.335E+02	0.330E+02	24.71	
TH-234	4.47E+09Y	1.00	1.049E+02	1.049E+02	0.113E+02	10.74	
U-235	7.04E+08Y	1.00	8.574E+00	8.574E+00	1.958E+00	22.84	
Total Activity :			1.150E+03	1.150E+03			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
SN-126	1.00E+05Y	1.00	3.696E+00	3.696E+00	0.637E+00	17.24	
NP-237	2.14E+06Y	1.00	1.085E+01	1.085E+01	0.186E+01	17.18	
Total Activity :			1.455E+01	1.455E+01			

Grand Total Activity : 1.165E+03 1.165E+03

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma		%Error	Status
				pCi/gram	pCi/gram		
K-40	1460.81	10.67*	5.045E-01	1.855E+01	1.855E+01	18.94	OK
Final Mean for 1 Valid Peaks = 1.855E+01+/- 3.513E+00 (18.94%)							
PB-210	46.50	4.25*	2.577E+00	6.121E+01	6.136E+01	10.98	OK
Final Mean for 1 Valid Peaks = 6.136E+01+/- 6.739E+00 (10.98%)							
PB-211	404.84	2.90*	1.415E+00	1.754E+01	1.754E+01	40.05	OK
	831.96	2.90	7.856E-01	1.082E+01	1.082E+01	53.29	OK
Final Mean for 2 Valid Peaks = 1.352E+01+/- 4.456E+00 (32.96%)							
PB-212	238.63	44.60*	2.057E+00	7.734E-01	7.734E-01	55.23	OK
	300.09	3.41	1.767E+00	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 7.734E-01+/- 4.271E-01 (55.23%)							
BI-214	609.31	46.30*	1.017E+00	1.211E+02	1.211E+02	10.73	OK
	1120.29	15.10	6.174E-01	1.304E+02	1.304E+02	9.67	OK
	1764.49	15.80	4.419E-01	1.429E+02	1.429E+02	10.35	OK
	2204.22	4.98	3.841E-01	1.391E+02	1.391E+02	11.93	OK
Final Mean for 4 Valid Peaks = 1.321E+02+/- 7.000E+00 (5.30%)							
PB-214	295.21	19.19	1.787E+00	1.300E+02	1.300E+02	29.27	OK
	351.92	37.19*	1.574E+00	1.305E+02	1.305E+02	19.73	OK
Final Mean for 2 Valid Peaks = 1.304E+02+/- 2.133E+01 (16.36%)							
RN-219	401.80	6.50*	1.423E+00	9.760E+00	9.760E+00	32.18	OK
Final Mean for 1 Valid Peaks = 9.760E+00+/- 3.140E+00 (32.18%)							
RA-223	323.87	3.88*	1.674E+00	7.311E+00	7.311E+00	60.66	OK
Final Mean for 1 Valid Peaks = 7.311E+00+/- 4.435E+00 (60.66%)							
RA-224	240.98	3.95*	2.045E+00	2.532E+02	2.532E+02	22.96	OK
Final Mean for 1 Valid Peaks = 2.532E+02+/- 5.813E+01 (22.96%)							
RA-226	186.21	3.28*	2.369E+00	2.766E+02	2.766E+02	183.42	OK
Final Mean for 1 Valid Peaks = 2.766E+02+/- 5.074E+02 (183.42%)							
PA-234M	1001.03	0.92*	6.754E-01	1.335E+02	1.335E+02	24.71	OK
Final Mean for 1 Valid Peaks = 1.335E+02+/- 3.298E+01 (24.71%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
TH-234	63.29	3.80*	2.882E+00	1.049E+02	1.049E+02	10.74	OK

Final Mean for 1 Valid Peaks = 1.049E+02+/- 1.126E+01 (10.74%)

U-235	143.76	10.50*	2.659E+00	9.657E+00	9.657E+00	27.88	OK
	163.35	4.70	2.523E+00	8.511E+00	8.511E+00	48.41	OK
	205.31	4.70	2.248E+00	6.297E+00	6.297E+00	62.78	OK

Final Mean for 3 Valid Peaks = 8.574E+00+/- 1.958E+00 (22.84%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
SN-126	87.57	37.00*	2.963E+00	3.696E+00	3.696E+00	17.24	OK

Final Mean for 1 Valid Peaks = 3.696E+00+/- 6.374E-01 (17.24%)

NP-237	86.50	12.60*	2.964E+00	1.085E+01	1.085E+01	17.18	OK
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Final Mean for 1 Valid Peaks = 1.085E+01+/- 1.864E+00 (17.18%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	1.855E+01	3.513E+00	2.871E+00	2.774E-01	6.463
SN-126	3.696E+00	6.374E-01	8.815E-01	8.419E-02	4.194
PB-210	6.136E+01	6.739E+00	6.261E+00	4.939E-01	9.800
PB-211	1.352E+01	4.456E+00	8.917E+00	9.492E-01	1.516
PB-212	7.734E-01	4.271E-01	5.585E-01	1.230E-01	1.385
BI-214	1.321E+02	7.000E+00	5.241E-01	5.191E-02	251.976
PB-214	1.304E+02	2.133E+01	6.600E-01	1.274E-01	197.524
RN-219	9.760E+00	3.140E+00	3.953E+00	4.204E-01	2.469
RA-223	7.311E+00	4.435E+00	6.253E+00	1.530E+00	1.169
RA-224	2.532E+02	5.813E+01	6.348E+00	1.429E+00	39.878
RA-226	2.766E+02	5.074E+02	8.187E+00	1.501E+01	33.789
PA-234M	1.335E+02	3.298E+01	3.053E+01	2.642E+00	4.372
TH-234	1.049E+02	1.126E+01	8.127E+00	6.033E-01	12.903
U-235	8.574E+00	1.958E+00	2.499E+00	4.579E-01	3.430
NP-237	1.085E+01	1.864E+00	2.686E+00	2.536E-01	4.040

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	-3.948E-01		2.225E+00	3.428E+00	3.669E-01	-0.115
NA-22	-1.001E-02		1.984E-01	2.943E-01	2.630E-02	-0.034
AL-26	6.283E-03		1.044E-01	1.757E-01	1.606E-02	0.036
TI-44	8.039E-01	+	1.402E-01	3.426E-01	2.662E-02	2.347
SC-46	1.272E-01		2.177E-01	3.704E-01	3.242E-02	0.344
V-48	-2.439E-01		5.974E-01	9.937E-01	8.620E-02	-0.245
CR-51	2.321E+00		3.600E+00	5.154E+00	1.303E+00	0.450
MN-54	2.197E-01		2.477E-01	3.069E-01	2.765E-02	0.716
CO-56	1.366E-01		2.354E-01	3.611E-01	3.235E-02	0.378
CO-57	7.512E-02		1.936E-01	3.106E-01	3.452E-02	0.242
CO-58	-9.430E-03		2.284E-01	3.460E-01	3.154E-02	-0.027
FE-59	-4.357E-01		4.695E-01	7.642E-01	7.002E-02	-0.570
CO-60	1.823E-01		1.698E-01	2.906E-01	2.382E-02	0.627
ZN-65	9.539E-01		4.420E-01	6.903E-01	5.805E-02	1.382
SE-75	1.686E-01		3.823E-01	4.829E-01	1.339E-01	0.349
RB-82	-7.945E-02		3.635E+00	4.381E+00	4.026E-01	-0.018
RB-83	2.645E-03		3.903E-01	6.397E-01	1.074E-01	0.004
KR-85	8.701E+01		3.668E+01	5.707E+01	6.049E+00	1.525
SR-85	5.197E-01		2.191E-01	3.408E-01	3.613E-02	1.525
Y-88	1.109E-01	+	6.662E-02	3.033E-01	2.755E-02	0.366
NB-93M	-5.937E+01		1.473E+01	1.771E+00	4.285E-01	-33.522
NB-94	3.815E-03		1.679E-01	2.832E-01	2.506E-02	0.013
NB-95	7.842E+00		8.849E-01	8.350E-01	7.698E-02	9.391
ZR-95	2.144E-02		5.231E-01	6.329E-01	6.361E-02	0.034
RU-103	-5.450E-02		2.496E-01	4.268E-01	6.611E-02	-0.128
RU-106	-1.239E-01		1.553E+00	2.379E+00	3.360E-01	-0.052
AG-108M	1.866E-01		1.820E-01	2.830E-01	2.624E-02	0.659
CD-109	5.565E+01		9.231E+00	9.964E+00	1.123E+00	5.585

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
AG-110M	3.935E-02		1.768E-01	2.721E-01	2.535E-02	0.145
SN-113	4.876E-02		3.227E-01	4.615E-01	4.991E-02	0.106
TE123M	1.050E-01		2.931E-01	3.777E-01	3.575E-02	0.278
SB-124	-3.410E-02		2.313E-01	3.535E-01	3.527E-02	-0.096
I-125	-5.660E+00		3.530E+00	5.629E+00	5.289E-01	-1.006
SB-125	5.395E-01		5.288E-01	9.134E-01	9.898E-02	0.591
SB-126	4.285E+00	+	2.201E+00	2.660E+00	2.467E-01	1.611
SB-127	2.141E+01		8.194E+01	1.401E+02	1.300E+01	0.153
I-129	-9.933E-02		3.420E-01	5.173E-01	5.681E-02	-0.192
I-131	-3.745E-01		2.139E+00	3.689E+00	6.169E-01	-0.102
BA-133	5.212E-01		2.755E-01	4.043E-01	8.494E-02	1.289
CS-134	2.387E-01	+	1.558E-01	2.848E-01	2.840E-02	0.838
CS-135	7.144E+00		2.336E+00	1.722E+00	4.913E-01	4.148
CS-136	-8.335E-01		1.159E+00	1.693E+00	1.496E-01	-0.492
CS-137	1.948E-01		1.851E-01	2.889E-01	2.680E-02	0.674
LA-138	-3.445E-02		2.676E-01	4.419E-01	4.169E-02	-0.078
CE-139	2.697E-01		2.607E-01	3.833E-01	3.499E-02	0.704
BA-140	-3.285E+00		3.359E+00	4.779E+00	1.609E+00	-0.687
LA-140	3.847E+00		1.162E+00	1.733E+00	1.631E-01	2.220
CE-141	2.634E+00		9.819E-01	1.096E+00	2.723E-01	2.404
CE-144	-1.188E+00		1.577E+00	2.499E+00	2.653E-01	-0.475
PM-144	9.407E-02		1.642E-01	2.540E-01	2.360E-02	0.370
PM-145	-3.463E-01		7.607E-01	1.185E+00	7.718E-01	-0.292
PM-146	7.828E-01	+	4.996E-01	6.298E-01	6.753E-02	1.243
ND-147	2.200E+00		6.913E+00	1.189E+01	1.251E+00	0.185
EU-152	2.254E+01	+	3.310E+00	3.419E+00	3.951E-01	6.592
GD-153	8.638E-02		7.756E-01	1.151E+00	1.171E-01	0.075
EU-154	2.592E-01		5.403E-01	8.173E-01	7.303E-02	0.317
EU-155	4.474E+00	+	7.689E-01	1.127E+00	1.064E-01	3.971
EU-156	-1.937E+00		6.376E+00	9.566E+00	2.203E+00	-0.203
HO-166M	-7.821E-02		3.761E-01	4.519E-01	4.192E-02	-0.173
HF-172	6.464E-01		1.416E+00	2.270E+00	2.485E-01	0.285
LU-172	-1.708E+00		5.646E+00	9.383E+00	7.942E-01	-0.182
LU-173	6.543E+00		2.136E+00	1.392E+00	4.097E-01	4.701
HF-175	7.370E-02		3.225E-01	4.046E-01	8.477E-02	0.182
LU-176	-2.044E-01		1.742E-01	2.542E-01	6.925E-02	-0.804
TA-182	6.758E+01	+	6.534E+00	3.422E+00	2.868E-01	19.751
IR-192	2.350E-01		4.343E-01	6.765E-01	7.250E-02	0.347
HG-203	1.562E-01		3.493E-01	5.021E-01	1.566E-01	0.311
BI-207	7.694E-03		1.427E-01	2.442E-01	2.508E-02	0.032
TL-208	7.699E-01		5.403E-01	8.447E-01	8.581E-02	0.911
BI-210M	3.193E-01		4.313E-01	5.407E-01	1.465E-01	0.591
BI-212	1.009E+00		1.349E+00	2.091E+00	1.938E-01	0.482
RA-225	-2.509E+00		2.030E+00	3.264E+00	2.812E-01	-0.769
TH-227	7.221E+00	+	2.165E+00	2.422E+00	5.202E-01	2.982
AC-228	-1.572E-01		6.420E-01	1.075E+00	9.363E-02	-0.146
TH-230	2.050E+02	+	3.574E+01	8.720E+01	6.762E+00	2.351
PA-231	1.450E+01		8.438E+00	1.093E+01	3.046E+00	1.327

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
TH-231	1.666E+00	+	1.671E+00	2.374E+00	3.062E-01	0.702
PA-233	5.520E-01		8.629E-01	1.330E+00	4.467E-01	0.415
PA-234	-4.474E-01		7.731E-01	1.228E+00	1.316E-01	-0.364
AM-241	3.175E+00		6.092E-01	8.564E-01	6.133E-02	3.708
AM-243	1.868E+01		1.773E+00	7.205E-01	6.006E-02	25.929
CM-243	-1.797E-01		1.239E+00	1.783E+00	5.481E-01	-0.101

Total number of lines in spectrum 112
Number of unidentified lines 68
Number of lines tentatively identified by NID 44 39.29%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.855E+01	1.855E+01	0.351E+01	18.94	
PB-210	22.26Y	1.00	6.121E+01	6.136E+01	0.674E+01	10.98	
PB-211	3.28E+04Y	1.00	1.352E+01	1.352E+01	0.446E+01	32.96	
PB-212	1.41E+10Y	1.00	7.734E-01	7.734E-01	4.271E-01	55.23	
BI-214	1602.00Y	1.00	1.320E+02	1.321E+02	0.070E+02	5.30	
PB-214	1602.00Y	1.00	1.304E+02	1.304E+02	0.213E+02	16.36	
RN-219	3.28E+04Y	1.00	9.760E+00	9.760E+00	3.140E+00	32.18	
RA-223	3.28E+04Y	1.00	7.311E+00	7.311E+00	4.435E+00	60.66	
RA-224	1.41E+10Y	1.00	2.532E+02	2.532E+02	0.581E+02	22.96	
RA-226	1602.00Y	1.00	2.766E+02	2.766E+02	5.074E+02	183.42	
PA-234M	4.47E+09Y	1.00	1.335E+02	1.335E+02	0.330E+02	24.71	
TH-234	4.47E+09Y	1.00	1.049E+02	1.049E+02	0.113E+02	10.74	
U-235	7.04E+08Y	1.00	8.574E+00	8.574E+00	1.958E+00	22.84	
Total Activity :			1.150E+03	1.150E+03			

Nuclide Type : FISSION

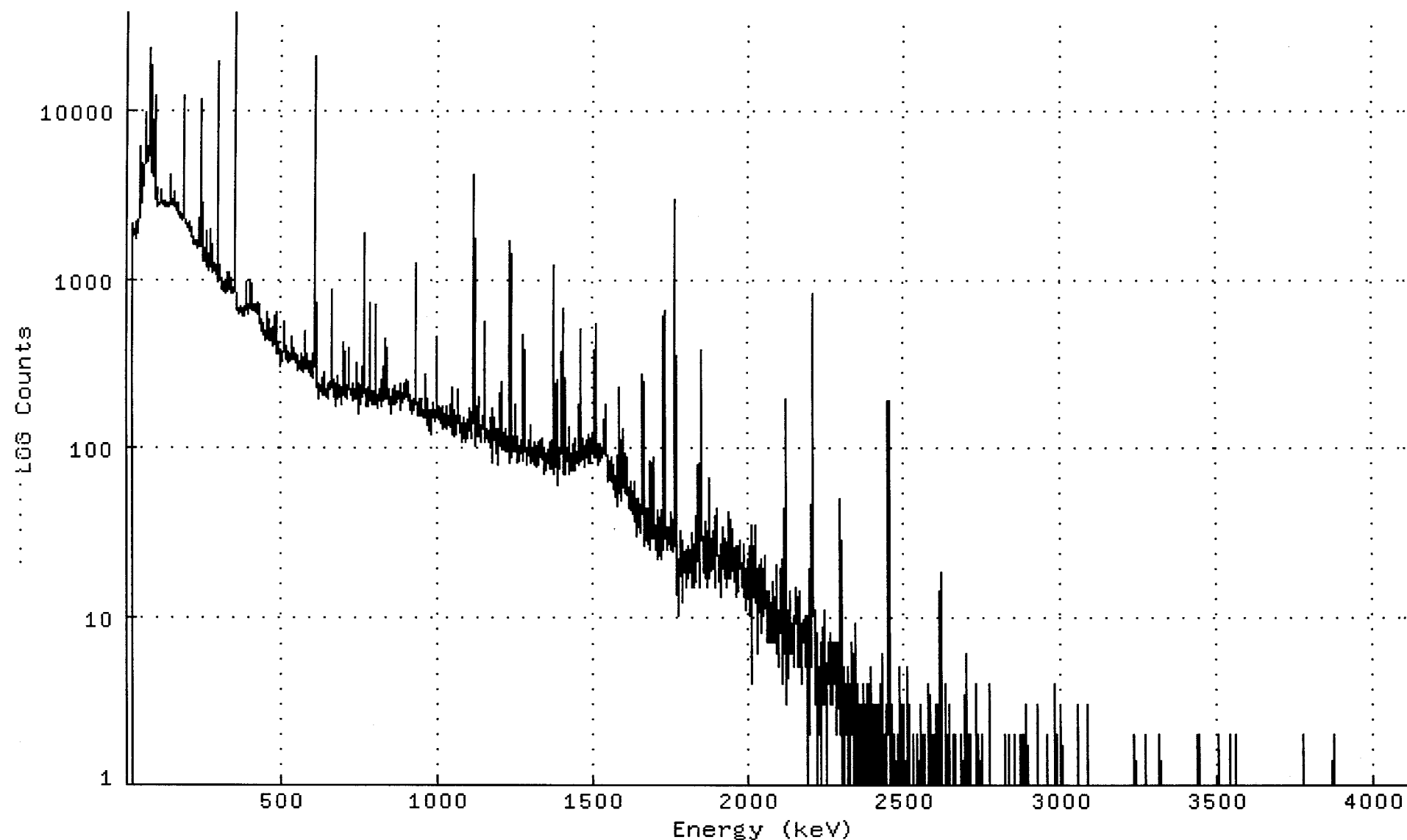
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
SN-126	1.00E+05Y	1.00	3.696E+00	3.696E+00	0.637E+00	17.24	
NP-237	2.14E+06Y	1.00	1.085E+01	1.085E+01	0.186E+01	17.18	
Total Activity :			1.455E+01	1.455E+01			

Grand Total Activity : 1.165E+03 1.165E+03

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301309_GE1_GAS1202_190139.CNF;1
Title :
Sample Title: MQZ-61-130303
Start Time: 1-APR-2013 15:38: Sample Time: 3-MAR-2013 00:00: Energy Offset: -2.35223E-01
Real Time : 0 01:00:36.34 Sample ID : 1303013-09 Energy Slope : 1.00007E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301309_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	1	3	1506	2125	1860	1826	1790	1816
25:	1928	1934	1928	1929	1703	1884	1830	2149
33:	1909	1875	1851	2071	2018	2034	2075	2125
41:	2305	2342	2405	2599	2592	4777	5981	2785
49:	2934	3633	3359	3333	4808	4291	3506	3642
57:	3762	4013	4488	4770	4946	5137	9589	8859
65:	5004	4860	5126	6037	5297	5274	5313	5340
73:	5773	7503	17622	8645	23150	14531	5263	5332
81:	5297	4540	4225	7547	4673	4015	8546	8193
89:	4369	6127	4318	6428	12190	4707	4291	3035
97:	2800	3371	3424	2775	2749	2669	2689	2742
105:	2775	2743	2701	2749	2926	2818	2948	2994
113:	3378	2898	2752	2819	2728	2699	2710	2713
121:	2803	2679	2796	2709	2826	2638	2818	2749
129:	2678	2717	2791	2643	2687	2667	2691	2729
137:	2804	2733	2736	2709	2945	2851	3019	4099
145:	3150	2731	2797	2805	2811	2947	2903	2864
153:	2863	3237	3173	2807	2622	2686	2764	2537
161:	2490	2537	2757	2816	2461	2361	2403	2388
169:	2418	2362	2422	2338	2408	2293	2311	2360
177:	2227	2250	2372	2340	2350	2339	2325	2341
185:	3702	11955	7145	2325	2108	2133	2156	2098
193:	2124	2149	2079	2084	2041	2028	2004	2090
201:	2022	2113	2003	1874	2070	2159	1847	1760
209:	1795	1767	1812	1767	1750	1707	1691	1620
217:	1689	1600	1669	1656	1688	1666	1574	1640
225:	1647	1602	1614	1534	1595	1667	1515	1550
233:	1558	1541	1646	2294	1801	1596	1789	1547
241:	2642	11446	5333	1473	1328	1270	1280	1292
249:	1273	1294	1339	1344	1246	1254	1360	1654
257:	1543	1428	1907	1396	1152	1109	1136	1157
265:	1215	1149	1151	1188	1605	1959	1738	1571
273:	1170	1286	1589	1158	1091	1090	1159	1117
281:	1164	1177	1096	1141	1095	1217	1153	1082
289:	1077	1116	1150	1046	1138	2235	18989	15105
297:	1422	940	1022	1188	1010	1031	1043	974
305:	998	868	888	867	867	922	854	857
313:	866	894	948	840	840	895	860	853
321:	804	863	907	1085	878	827	863	884
329:	886	1077	887	878	853	880	868	900
337:	813	946	994	842	866	825	863	815
345:	870	839	842	862	950	1093	8062	38220
353:	12979	941	709	692	654	671	649	645
361:	654	607	629	657	662	628	643	648
369:	660	624	639	676	617	603	653	659
377:	650	622	600	639	679	661	657	617
385:	656	693	884	689	959	713	653	612
393:	613	680	696	666	684	675	715	660
401:	703	975	743	703	925	813	697	670
409:	642	684	648	643	684	667	691	635
417:	674	685	628	641	702	608	628	706
425:	626	651	670	688	575	559	594	535

433:	539	565	512	488	531	528	536	488
441:	488	473	479	499	536	482	428	465
449:	486	461	463	444	453	519	627	511
457:	460	434	459	488	484	570	499	433
465:	463	430	447	486	494	500	464	444
473:	413	506	462	395	428	445	411	535
481:	602	407	392	426	354	426	630	556
489:	372	357	363	384	415	363	365	368
497:	339	341	345	378	297	327	364	334
505:	353	337	353	363	430	534	559	480
513:	409	393	378	353	356	343	334	318
521:	360	365	350	345	337	333	332	327
529:	345	360	319	325	388	448	369	351
537:	374	332	330	329	332	338	386	363
545:	359	329	330	325	357	314	320	281
553:	298	351	329	329	322	315	310	311
561:	319	293	321	360	285	301	292	281
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593:	296	264	301	321	306	318	297	305
601:	292	283	255	303	353	296	350	2500
609:	20455	19017	2109	250	225	237	256	272
617:	244	253	193	236	226	220	220	234
625:	213	214	232	225	233	226	238	258
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705:	264	236	220	231	197	208	233	226
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2329:	2	7	5	4	6	5	1	4
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2409:	1	1	0	1	3	1	2	1
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3073:	0	0	0	1	0	0	0	1
3081:	3	0	2	0	0	1	0	0
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3273:	0	0	0	0	0	0	0	0
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3665:	0	1	0	0	0	1	0	0
3673:	1	0	0	1	0	0	0	0
3681:	0	0	0	1	0	1	0	1
3689:	0	0	0	0	1	0	0	0
3697:	0	0	0	0	1	0	0	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	0	1	0	1
3721:	0	0	0	1	0	1	0	0
3729:	0	0	0	0	1	0	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	1	0	0	1	0	0
3753:	1	0	0	1	0	0	0	0
3761:	0	1	0	1	0	0	0	0
3769:	0	0	2	0	0	0	0	0
3777:	0	0	0	0	0	0	1	0
3785:	0	0	0	0	0	0	0	1

3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	1	0
3817:	0	0	0	1	0	0	1	0
3825:	0	0	1	0	1	0	0	0
3833:	0	0	0	0	0	0	0	0
3841:	0	1	0	0	0	0	0	0
3849:	0	0	0	0	1	0	0	0
3857:	0	1	0	1	1	0	0	0
3865:	0	2	0	0	0	0	0	1
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	1	0	0	1	1	0
3905:	0	1	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	1	0	0
3937:	0	1	0	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	1	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	1	0	0	0	1	0	0
3993:	1	0	0	0	1	0	0	0
4001:	0	0	0	0	0	0	0	1
4009:	0	1	0	0	0	0	0	0
4017:	0	0	0	0	0	0	1	0
4025:	0	0	0	0	0	0	0	0
4033:	1	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	1	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	1	0	0	0	0	1	0
4081:	1	0	0	0	0	0	0	1
4089:	0	0	1	0	0	0	0	1

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Sample ID : 1303013-10

Acquisition date : 1-APR-2013 15:43:47

VAX/VMS Peak Search Report Generated 1-APR-2013 16:44:20.89

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301310_GE2_GAS1202_190140.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-62-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 15:43:47.
 Sample ID : 1303013-10 Sample Quantity : 5.71710E+02 gram
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE2 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:20.48 0.6%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	26.54	239	6819	4.38	26.66	25	5104.5			
0	46.19*	3802	11633	1.78	46.30	44	6	9.6		PB-210
0	52.59*	1641	13469	1.15	52.71	50	6	22.9		
0	63.14*	2293	16285	1.48	63.25	61	5	17.2		TH-234
1	67.85	994	13163	1.47	67.96	66	17	33.1	1.45E+03	
1	75.02*	14897	12624	1.48	75.13	66	17	2.7		AM-243
0	93.51	2558	14513	1.46	93.63	91	6	15.7		
0	123.21	294	10842	2.00	123.32	121	61	12.6		CO-57
0	129.43	451	10811	2.84	129.54	127	6	73.5		
0	143.85*	824	9595	1.23	143.97	142	5	36.4		U-235
0	153.92	693	15895	1.27	154.03	149	8	63.5		
0	163.48*	380	8308	1.35	163.59	162	5	72.8		U-235
0	185.91*	9476	12580	1.35	186.02	182	8	4.6		RA-226
0	204.95*	455	6384	2.45	205.06	203	5	53.7		U-235
0	209.81	251	5929	1.67	209.92	209	5	93.0		
1	236.05	1382	5175	1.66	236.16	232	15	16.2	1.65E+01	
1	241.75	11097	3785	1.41	241.86	232	15	2.5		RA-224
1	256.01	551	4285	1.73	256.12	253	9	37.1	3.51E+00	
1	258.73	715	4154	1.54	258.84	253	9	28.4		
6	267.04	194	3979	2.17	267.15	265	13	101.6	3.66E+01	CS-135
6	269.72	2083	6265	2.82	269.83	265	13	14.0		
6	274.73	725	4557	2.57	274.84	265	13	30.8		
0	285.22	191	4628	1.51	285.33	284	61	13.8		
0	294.92*	24220	5758	1.33	295.03	291	8	1.7		PB-214
0	299.48	208	2795	1.04	299.59	299	4	73.2		
0	323.43	356	3524	2.02	323.54	321	6	53.8		RA-223
0	329.35	276	3589	1.39	329.45	327	6	69.7		
0	338.60	269	2946	2.96	338.71	337	5	61.9		
0	351.57*	41476	5200	1.73	351.68	347	10	1.2		PB-214
2	386.25	235	2806	2.05	386.35	383	9	73.0	1.72E+00	
2	388.59	367	2337	1.69	388.69	383	9	41.6		
4	401.45	377	2386	1.62	401.55	397	11	40.0	1.92E+00	RN-219
4	404.87	348	2382	1.50	404.98	397	11	43.5		
0	426.91	363	3300	3.33	427.02	424	8	56.0		
0	454.21	296	2193	2.19	454.32	451	7	53.8		
0	461.51	126	1850	1.90	461.62	459	61	09.6		

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It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	478.91	379	3192	1.91	479.01	473	11	58.7		BE-7
0	486.97	488	1991	2.00	487.08	484	8	33.1		
0	511.05*	592	2577	3.00	511.15	506	11	34.5		
0	532.53	109	1392	1.26	532.63	530		6110.0		
0	581.26*	266	1976	1.58	581.36	576	9	61.6		
0	608.81*	31713	1892	1.58	608.91	604	10	1.2		BI-214
1	664.92	927	743	1.73	665.02	660	9	11.0	1.23E+00	
0	702.63	273	1108	2.20	702.73	699	7	42.2		NB-94
0	719.98	287	1122	1.98	720.08	716	8	42.1		
0	741.99	192	968	3.66	742.08	739	7	55.8		
0	767.73*	2907	1400	1.80	767.83	763	10	6.1		
0	785.36	681	1041	2.23	785.46	782	8	18.2		
0	805.42	761	1300	1.95	805.52	801	10	19.1		
0	820.32	76	850	1.71	820.42	818		6123.1		
0	837.78	370	1672	1.94	837.87	831	11	44.1		
0	871.38	77	816	2.76	871.47	869		6119.2		NB-94
0	933.18*	1672	1425	2.17	933.27	927	12	10.3		
0	962.72	170	1217	2.27	962.81	959	10	77.8		
0	1000.37*	169	1061	1.91	1000.46	996	9	71.0		PA-234M
0	1025.84	129	610	4.32	1025.93	1023	7	66.1		
0	1051.66	106	718	1.79	1051.75	1048	7	86.8		
0	1069.35	213	852	1.89	1069.44	1065	10	53.1		
0	1102.70	72	560	1.28	1102.78	1101		6107.2		
0	1119.56*	6781	1173	2.21	1119.65	1113	14	3.2		BI-214
0	1132.32	146	672	2.51	1132.41	1128	8	63.5		
0	1144.03	82	527	2.35	1144.11	1141	7	94.9		
0	1154.13	759	995	2.19	1154.22	1149	11	17.6		
0	1181.58	139	611	4.60	1181.66	1178	8	63.9		
0	1207.27	145	780	1.96	1207.36	1202	10	74.3		
0	1227.60	69	432	2.58	1227.69	1225	6	98.4		
0	1237.35*	2324	763	2.14	1237.44	1233	10	6.1		
0	1252.51	223	659	3.38	1252.59	1249	10	45.0		
0	1280.19	501	775	2.19	1280.28	1275	10	22.6		
0	1326.61	90	567	4.06	1326.70	1323		10101.0		
3	1372.39	37	108	2.70	1372.47	1371	11	72.6	1.56E+00	
3	1376.75*	1689	407	2.19	1376.83	1371	11	6.3		
0	1384.52	349	635	2.28	1384.60	1382	10	29.0		
2	1400.58	489	442	2.05	1400.66	1396	17	16.3	2.35E+00	
2	1407.16*	833	443	2.14	1407.24	1396	17	10.6		
0	1422.91	76	474	4.70	1422.99	1421		8101.7		
0	1447.58	142	668	7.89	1447.66	1442	12	74.6		
0	1459.78*	708	701	2.24	1459.85	1455	11	16.3		K-40
0	1468.50	78	542	6.73	1468.58	1466		9110.5		
0	1478.24	112	585	1.36	1478.32	1475	10	82.7		
2	1504.36	54	249	1.85	1504.43	1503	12	88.3	2.42E+00	
2	1508.30	816	452	2.27	1508.38	1503	12	11.2		
0	1537.47	105	616	2.18	1537.54	1533	8	84.2		
0	1542.16	92	466	2.13	1542.24	1541	7	81.6		
0	1582.36	253	380	2.27	1582.44	1578	8	29.5		
0	1593.06	72	318	3.82	1593.14	1590	7	85.3		
0	1598.66	96	252	2.81	1598.74	1596	6	56.5		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1605.82	48	272	2.73	1605.90	1603	7116.7			
0	1660.55	412	254	2.20	1660.63	1656	11	18.1		
0	1682.96	103	210	2.11	1683.03	1678	10	56.2		
0	1692.56	152	212	2.56	1692.64	1688	11	40.7		
0	1728.43	1070	252	2.47	1728.50	1724	11	8.4		
2	1763.36*	5305	109	2.54	1763.43	1756	16	2.8	3.73E+00	BI-214
2	1768.93	37	81	2.39	1769.00	1756	16178.7			
0	1792.76	27	90	1.98	1792.83	1790	7125.1			
2	1837.19	122	126	2.92	1837.26	1833	19	36.5	1.49E+00	
2	1846.30	717	84	2.49	1846.37	1833	19	8.6		
0	1871.53	64	174	1.56	1871.59	1867	10	81.8		
0	1888.56	41	117	3.27	1888.63	1886	7	91.3		
0	1935.04	81	156	3.84	1935.11	1930	10	61.3		
0	1993.47	35	117	1.48	1993.54	1989	10119.4			
0	2088.75	24	58	1.60	2088.82	2084	10125.6			
1	2108.79	20	59	2.76	2108.85	2104	19137.5	1.31E+00		
1	2117.08	361	55	2.60	2117.15	2104	19	12.7		
0	2202.59*	1449	57	2.75	2202.65	2198	12	5.7		
0	2244.03	17	13	7.70	2244.09	2237	11	95.0		
0	2291.98	89	30	3.10	2292.03	2286	15	34.2		
0	2401.48	15	0	4.66	2401.53	2397	9	51.6		
0	2409.95	12	4	4.44	2410.01	2406	8	79.6		
0	2427.85	8	4	2.95	2427.90	2424	8128.5			
0	2446.04	426	11	3.04	2446.09	2439	14	10.2		
0	2480.07	8	2	1.60	2480.13	2477	8	98.5		
0	2612.66*	39	4	2.73	2612.72	2605	13	40.1		
0	2693.81	11	2	3.50	2693.86	2689	9	78.9		
0	2726.35	10	0	2.58	2726.40	2722	8	63.2		
0	2769.09	10	2	3.58	2769.13	2764	8	82.1		
0	3242.97	5	0	1.50	3243.00	3239	7	89.4		

Total number of lines in spectrum 117
Number of unidentified lines 70
Number of lines tentatively identified by NID 47 40.17%

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BE-7	53.44D	1.47	4.224E+00	6.208E+00	3.705E+00	59.68	
NB-94	20300.00Y	1.00	2.800E-01	2.800E-01	1.285E-01	45.88	
CS-135	2.30E+06Y	1.00	9.151E-01	9.151E-01	9.443E-01	103.19	
AM-243	7380.00Y	1.00	1.196E+01	1.196E+01	0.118E+01	9.83	
Total Activity :			1.738E+01	1.937E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.853E+01	1.853E+01	0.352E+01	18.99	
PB-210	22.26Y	1.00	5.968E+01	5.983E+01	0.811E+01	13.55	
BI-214	1602.00Y	1.00	1.018E+02	1.018E+02	0.063E+02	6.16	
PB-214	1602.00Y	1.00	1.018E+02	1.018E+02	0.116E+02	11.39	
RN-219	3.28E+04Y	1.00	5.873E+00	5.873E+00	2.429E+00	41.36	
RA-223	3.28E+04Y	1.00	7.884E+00	7.884E+00	4.441E+00	56.33	
RA-224	1.41E+10Y	1.00	1.980E+02	1.980E+02	0.310E+02	15.67	
RA-226	1602.00Y	1.00	1.767E+02	1.767E+02	3.239E+02	183.30	
PA-234M	4.47E+09Y	1.00	3.903E+01	3.903E+01	2.800E+01	71.75	
TH-234	4.47E+09Y	1.00	3.369E+01	3.369E+01	0.649E+01	19.27	
U-235	7.04E+08Y	1.00	4.692E+00	4.692E+00	1.449E+00	30.88	
Total Activity :			7.478E+02	7.479E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.08	1.816E-01	1.960E-01	2.221E-01	113.35	
Total Activity :			1.816E-01	1.960E-01			

Grand Total Activity : 7.653E+02 7.675E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
BE-7	477.59	10.42*	1.131E+00	4.224E+00	6.208E+00	59.68	OK

Final Mean for 1 Valid Peaks = 6.208E+00+/- 3.705E+00 (59.68%)

NB-94	702.63	100.00	8.231E-01	4.356E-01	4.356E-01	43.40	OK
	871.10	100.00*	6.907E-01	1.465E-01	1.465E-01	119.56	OK

Final Mean for 2 Valid Peaks = 2.800E-01+/- 1.285E-01 (45.88%)

CS-135	268.24	16.00*	1.740E+00	9.151E-01	9.151E-01	103.19	OK
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Final Mean for 1 Valid Peaks = 9.151E-01+/- 9.443E-01 (103.19%)

AM-243	74.67	66.00*	2.478E+00	1.196E+01	1.196E+01	9.83	OK
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Final Mean for 1 Valid Peaks = 1.196E+01+/- 1.176E+00 (9.83%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
K-40	1460.81	10.67*	4.705E-01	1.853E+01	1.853E+01	18.99	OK

Final Mean for 1 Valid Peaks = 1.853E+01+/- 3.518E+00 (18.99%)

PB-210	46.50	4.25*	1.969E+00	5.968E+01	5.983E+01	13.55	OK
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Final Mean for 1 Valid Peaks = 5.983E+01+/- 8.106E+00 (13.55%)

BI-214	609.31	46.30*	9.260E-01	9.713E+01	9.714E+01	10.43	OK
	1120.29	15.10	5.678E-01	1.039E+02	1.039E+02	11.24	OK
	1764.49	15.80	4.183E-01	1.054E+02	1.054E+02	10.36	OK
	2204.22	4.98	3.725E-01	-----	Line Not Found	-----	Absent

Final Mean for 3 Valid Peaks = 1.018E+02+/- 6.266E+00 (6.16%)

PB-214	295.21	19.19	1.631E+00	1.016E+02	1.016E+02	18.65	OK
	351.92	37.19*	1.436E+00	1.020E+02	1.020E+02	14.39	OK

Final Mean for 2 Valid Peaks = 1.018E+02+/- 1.160E+01 (11.39%)

RN-219	401.80	6.50*	1.298E+00	5.873E+00	5.873E+00	41.36	OK
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Final Mean for 1 Valid Peaks = 5.873E+00+/- 2.429E+00 (41.36%)

RA-223	323.87	3.88*	1.527E+00	7.884E+00	7.884E+00	56.33	OK
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Final Mean for 1 Valid Peaks = 7.884E+00+/- 4.441E+00 (56.33%)

Sample ID : 1303013-10

Acquisition date : 1-APR-2013 15:43:47

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
RA-224	240.98	3.95*	1.863E+00	1.980E+02	1.980E+02	15.67	OK

Final Mean for 1 Valid Peaks = 1.980E+02+/- 3.103E+01 (15.67%)

RA-226	186.21	3.28*	2.147E+00	1.767E+02	1.767E+02	183.30	OK
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Final Mean for 1 Valid Peaks = 1.767E+02+/- 3.239E+02 (183.30%)

PA-234M	1001.03	0.92*	6.188E-01	3.903E+01	3.903E+01	71.75	OK
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Final Mean for 1 Valid Peaks = 3.903E+01+/- 2.800E+01 (71.75%)

TH-234	63.29	3.80*	2.351E+00	3.369E+01	3.369E+01	19.27	OK
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Final Mean for 1 Valid Peaks = 3.369E+01+/- 6.495E+00 (19.27%)

U-235	143.76	10.50*	2.382E+00	4.323E+00	4.323E+00	41.02	OK
	163.35	4.70	2.275E+00	4.668E+00	4.668E+00	75.35	OK
	205.31	4.70	2.043E+00	6.229E+00	6.229E+00	57.68	OK

Final Mean for 3 Valid Peaks = 4.692E+00+/- 1.449E+00 (30.88%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CO-57	122.06	85.51*	2.486E+00	1.816E-01	1.960E-01	113.35	OK
	136.48	10.60	2.420E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 1.960E-01+/- 2.221E-01 (113.35%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	6.208E+00	3.705E+00	3.108E+00	3.105E-01	1.997
K-40	1.853E+01	3.518E+00	2.648E+00	2.339E-01	6.998
CO-57	1.960E-01	2.221E-01	2.753E-01	3.368E-02	0.712
NB-94	2.800E-01	1.285E-01	2.701E-01	2.319E-02	1.036
CS-135	9.151E-01	9.443E-01	1.360E+00	2.427E-01	0.673
PB-210	5.983E+01	8.106E+00	6.382E+00	5.548E-01	9.375
BI-214	1.018E+02	6.266E+00	4.787E-01	4.573E-02	212.677
PB-214	1.018E+02	1.160E+01	5.918E-01	8.149E-02	172.074
RN-219	5.873E+00	2.429E+00	3.612E+00	3.538E-01	1.626
RA-223	7.884E+00	4.441E+00	5.540E+00	8.936E-01	1.423
RA-224	1.980E+02	3.103E+01	5.710E+00	8.535E-01	34.681
RA-226	1.767E+02	3.239E+02	7.329E+00	1.343E+01	24.113
PA-234M	3.903E+01	2.800E+01	2.882E+01	2.644E+00	1.354
TH-234	3.369E+01	6.495E+00	7.668E+00	5.912E-01	4.394
U-235	4.692E+00	1.449E+00	2.273E+00	4.191E-01	2.064
AM-243	1.196E+01	1.176E+00	4.670E-01	3.998E-02	25.616

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
NA-22	2.896E-03		1.863E-01	2.737E-01	2.487E-02	0.011
AL-26	-1.986E-02		9.679E-02	1.699E-01	1.558E-02	-0.117
TI-44	5.737E-01	+	1.966E-01	3.252E-01	2.612E-02	1.764
SC-46	-5.089E-02		2.082E-01	3.466E-01	2.939E-02	-0.147
V-48	-4.062E-01		5.740E-01	9.373E-01	8.484E-02	-0.433
CR-51	-1.876E-02		3.193E+00	4.622E+00	7.701E-01	-0.004
MN-54	2.985E-01		1.693E-01	2.917E-01	2.557E-02	1.023
CO-56	9.825E-02		2.070E-01	3.356E-01	2.924E-02	0.293
CO-58	-1.048E-01		2.152E-01	3.191E-01	2.836E-02	-0.329
FE-59	7.041E-02		5.171E-01	7.695E-01	8.058E-02	0.092
CO-60	-3.460E-02		1.863E-01	2.735E-01	2.829E-02	-0.126
ZN-65	6.166E+00		8.392E-01	9.926E-01	9.897E-02	6.212
SE-75	2.468E-01		3.413E-01	4.386E-01	7.668E-02	0.563
RB-82	-7.656E-01		3.455E+00	4.093E+00	3.675E-01	-0.187
RB-83	-7.966E-02		3.727E-01	5.722E-01	9.390E-02	-0.139
KR-85	6.817E+01		3.231E+01	5.107E+01	5.092E+00	1.335
SR-85	4.072E-01		1.930E-01	3.050E-01	3.041E-02	1.335
Y-88	4.762E-01	+	1.805E-01	2.832E-01	2.606E-02	1.682
NB-93M	-1.877E+01		1.038E+01	1.198E+01	4.730E+00	-1.567
NB-95	7.682E+00		8.560E-01	8.386E-01	7.556E-02	9.160
ZR-95	-4.018E-01		3.758E-01	5.850E-01	5.771E-02	-0.687
RU-103	5.209E-02		2.301E-01	3.969E-01	5.968E-02	0.131
RU-106	-3.155E-01		1.284E+00	2.180E+00	3.033E-01	-0.145
AG-108M	1.641E-01		1.646E-01	2.565E-01	2.330E-02	0.640
CD-109	5.868E+01		9.045E+00	9.103E+00	1.040E+00	6.446
AG-110M	4.082E-02		1.589E-01	2.446E-01	2.236E-02	0.167
SN-113	-6.812E-02		2.982E-01	4.252E-01	4.244E-02	-0.160

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
TE123M	1.461E-02		2.600E-01	3.399E-01	3.068E-02	0.043
SB-124	-8.083E-02		2.193E-01	3.325E-01	3.192E-02	-0.243
I-125	-2.911E+00		3.810E+00	6.324E+00	7.061E-01	-0.460
SB-125	1.343E+00	+	7.659E-01	8.545E-01	8.582E-02	1.572
SB-126	4.572E+00	+	1.976E+00	2.474E+00	2.248E-01	1.848
SN-126	5.055E+00		7.548E-01	8.654E-01	8.420E-02	5.841
SB-127	2.956E+01		7.541E+01	1.292E+02	1.177E+01	0.229
I-129	2.434E-01		3.967E-01	6.220E-01	8.605E-02	0.391
I-131	-3.988E-01		1.936E+00	3.351E+00	4.218E-01	-0.119
BA-133	-7.501E-02		2.426E-01	3.468E-01	5.797E-02	-0.216
CS-134	1.361E+00		2.313E-01	3.221E-01	3.094E-02	4.227
CS-136	6.354E-01		1.122E+00	1.696E+00	1.652E-01	0.375
CS-137	4.614E-01		1.790E-01	2.840E-01	2.589E-02	1.625
LA-138	1.890E-01		2.714E-01	4.336E-01	3.697E-02	0.436
CE-139	2.609E-01		2.272E-01	3.400E-01	2.852E-02	0.767
BA-140	-2.252E+00		2.916E+00	4.254E+00	1.425E+00	-0.529
LA-140	2.613E+00		1.204E+00	1.574E+00	1.396E-01	1.660
CE-141	9.071E-01		7.546E-01	9.590E-01	2.389E-01	0.946
CE-144	-1.370E+00		1.518E+00	2.241E+00	2.521E-01	-0.611
PM-144	-3.365E-02		1.550E-01	2.344E-01	2.137E-02	-0.144
PM-145	-1.629E-01		7.837E-01	1.300E+00	8.501E-01	-0.125
PM-146	8.339E-01	+	4.575E-01	5.861E-01	5.840E-02	1.423
ND-147	5.968E+00		6.976E+00	1.093E+01	1.086E+00	0.546
EU-152	1.524E+01	+	2.385E+00	3.137E+00	3.384E-01	4.858
GD-153	-4.782E-01		6.374E-01	1.032E+00	1.109E-01	-0.463
EU-154	-2.360E-03		5.161E-01	7.577E-01	6.886E-02	-0.003
EU-155	9.414E-01		6.835E-01	1.036E+00	9.971E-02	0.909
EU-156	4.833E-02		6.491E+00	8.949E+00	2.052E+00	0.005
HO-166M	1.661E-02		2.757E-01	4.199E-01	3.820E-02	0.040
HF-172	8.789E-01		1.518E+00	2.014E+00	2.398E-01	0.436
LU-172	-2.886E+00		5.607E+00	9.157E+00	8.989E-01	-0.315
LU-173	5.662E+00		1.294E+00	1.277E+00	2.335E-01	4.435
HF-175	3.894E-02		2.858E-01	3.611E-01	5.246E-02	0.108
LU-176	-6.216E-02		1.590E-01	2.285E-01	3.970E-02	-0.272
TA-182	4.998E+01		5.562E+00	3.079E+00	3.080E-01	16.229
IR-192	2.259E-01		4.823E-01	6.058E-01	6.048E-02	0.373
HG-203	1.816E-01		3.487E-01	4.466E-01	8.580E-02	0.407
BI-207	2.747E-02		1.408E-01	2.310E-01	2.262E-02	0.119
TL-208	6.541E-01		4.838E-01	7.623E-01	7.410E-02	0.858
BI-210M	6.750E-02		3.807E-01	4.878E-01	8.372E-02	0.138
PB-211	1.220E+01	+	5.467E+00	8.768E+00	8.600E-01	1.391
BI-212	-3.168E-01		1.263E+00	1.903E+00	1.727E-01	-0.166
PB-212	3.325E+00		6.147E-01	6.067E-01	8.923E-02	5.481
RA-225	-1.104E+00		2.251E+00	3.471E+00	3.429E-01	-0.318
TH-227	8.366E+00	+	1.846E+00	2.206E+00	3.187E-01	3.792
AC-228	-4.955E-02		6.087E-01	1.016E+00	8.661E-02	-0.049
TH-230	1.464E+02	+	5.017E+01	8.295E+01	6.648E+00	1.765
PA-231	7.993E+00		6.698E+00	9.689E+00	1.711E+00	0.825

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
TH-231	2.147E+00	+	2.277E+00	3.055E+00	5.254E-01	0.703
PA-233	7.958E-01		7.918E-01	1.219E+00	3.270E-01	0.653
PA-234	2.012E-01		7.325E-01	1.101E+00	1.260E-01	0.183
NP-237	2.285E+00		1.657E+00	2.512E+00	2.418E-01	0.910
AM-241	2.250E+00		5.455E-01	8.125E-01	6.074E-02	2.769
CM-243	-5.386E-01		1.096E+00	1.577E+00	2.982E-01	-0.342

Summary of Nuclide Activity

Page : 10

Sample ID : 1303013-10

Acquisition date : 1-APR-2013 15:43:47

Total number of lines in spectrum 117
 Number of unidentified lines 70
 Number of lines tentatively identified by NID 47 40.17%

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BE-7	53.44D	1.47	4.224E+00	6.208E+00	3.705E+00	59.68	
NB-94	20300.00Y	1.00	2.800E-01	2.800E-01	1.285E-01	45.88	
CS-135	2.30E+06Y	1.00	9.151E-01	9.151E-01	9.443E-01	103.19	
AM-243	7380.00Y	1.00	1.196E+01	1.196E+01	0.118E+01	9.83	
Total Activity :			1.738E+01	1.937E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.853E+01	1.853E+01	0.352E+01	18.99	
PB-210	22.26Y	1.00	5.968E+01	5.983E+01	0.811E+01	13.55	
BI-214	1602.00Y	1.00	1.018E+02	1.018E+02	0.063E+02	6.16	
PB-214	1602.00Y	1.00	1.018E+02	1.018E+02	0.116E+02	11.39	
RN-219	3.28E+04Y	1.00	5.873E+00	5.873E+00	2.429E+00	41.36	
RA-223	3.28E+04Y	1.00	7.884E+00	7.884E+00	4.441E+00	56.33	
RA-224	1.41E+10Y	1.00	1.980E+02	1.980E+02	0.310E+02	15.67	
RA-226	1602.00Y	1.00	1.767E+02	1.767E+02	3.239E+02	183.30	
PA-234M	4.47E+09Y	1.00	3.903E+01	3.903E+01	2.800E+01	71.75	
TH-234	4.47E+09Y	1.00	3.369E+01	3.369E+01	0.649E+01	19.27	
U-235	7.04E+08Y	1.00	4.692E+00	4.692E+00	1.449E+00	30.88	
Total Activity :			7.478E+02	7.479E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.08	1.816E-01	1.960E-01	2.221E-01	113.35	
Total Activity :			1.816E-01	1.960E-01			

Grand Total Activity : 7.653E+02 7.675E+02

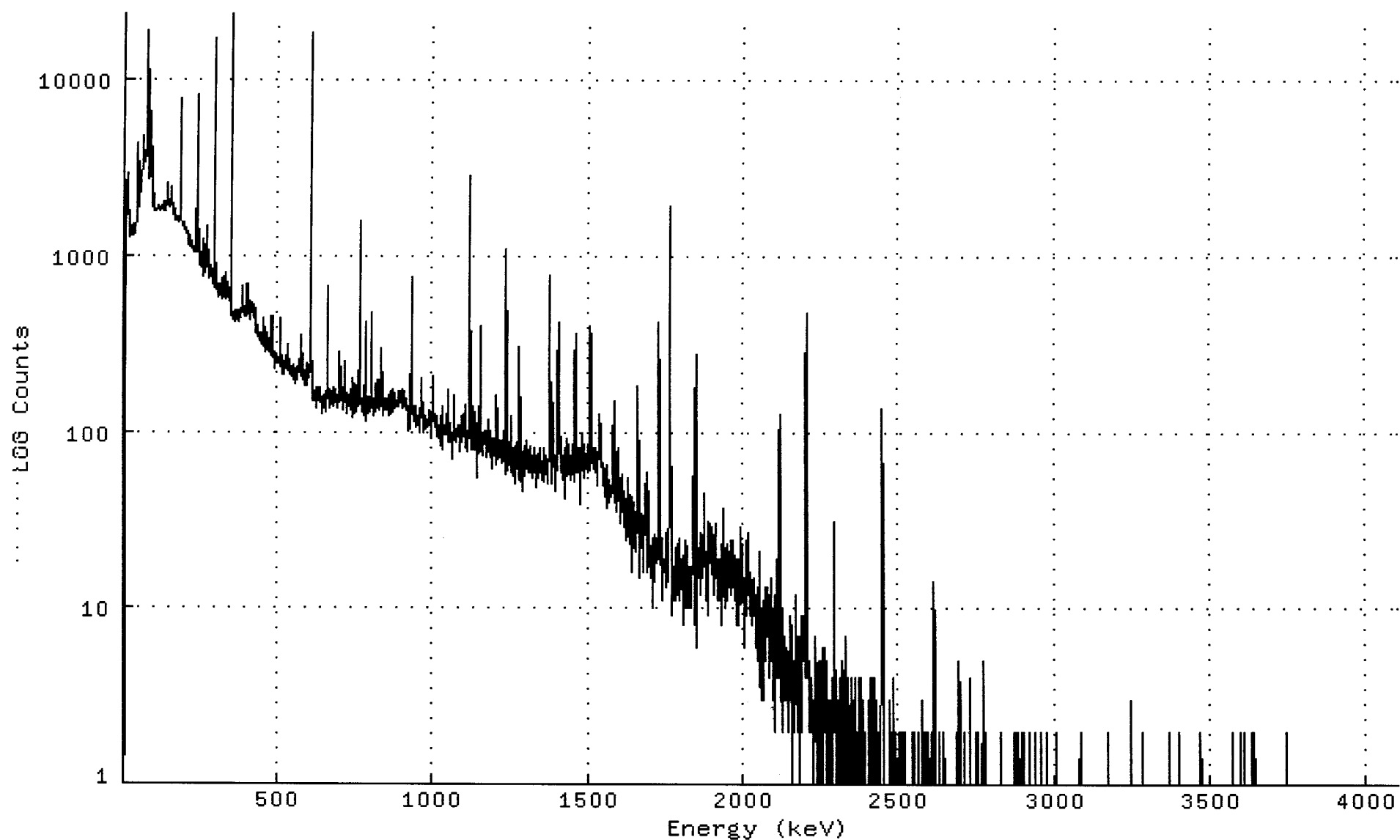
Flags: "K" = Keyline not found

"E" = Manually edited

"M" = Manually accepted

"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301310_GE2_GAS1202_190140.CNF;1
Title :
Sample Title: MQZ-62-130303
Start Time: 1-APR-2013 15:43: Sample Time: 3-MAR-2013 00:00: Energy Offset: -1.16012E-01
Real Time : 0 01:00:20.48 Sample ID : 1303013-10 Energy Slope : 1.00003E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE] SMP_130301310_GE2_GAS1202_1901

Channel

1:	0	0	0	0	2	366	1848	2544
9:	2586	2655	2197	2520	2915	1683	1806	2024
17:	1610	1527	1458	1483	1342	1273	1287	1361
25:	1463	1388	1437	1467	1303	1362	1303	1485
33:	1311	1281	1407	1443	1399	1329	1424	1497
41:	1538	1573	1704	1797	1885	3822	4285	1842
49:	1853	2531	2178	2150	3382	2591	2284	2283
57:	2475	2612	2916	3121	3189	3313	4784	4036
65:	3311	3345	3712	3937	3496	3383	3561	3581
73:	3828	6758	11764	6269	18471	6796	3730	3316
81:	3930	2689	3197	4979	2730	3013	6549	4520
89:	2941	3928	2469	3438	4103	2588	2602	1871
97:	2001	2192	1957	1881	1798	1772	1801	1838
105:	1834	1796	1785	1794	1886	1805	1930	1910
113:	1927	1846	1782	1884	1882	1870	1795	1808
121:	1837	1879	1916	1841	1839	1824	1768	1983
129:	1878	1912	1877	1844	1768	1886	1852	1884
137:	1940	1992	1918	1927	2025	1918	2098	2572
145:	1982	1872	1897	2010	2054	2034	1955	1961
153:	2077	2462	2072	1973	1929	1953	1802	1797
161:	1718	1692	1899	1755	1716	1632	1635	1719
169:	1569	1644	1610	1575	1605	1606	1646	1601
177:	1588	1536	1649	1597	1625	1657	1666	1696
185:	2949	7727	3379	1557	1520	1508	1513	1505
193:	1456	1541	1510	1468	1437	1545	1408	1402
201:	1420	1382	1406	1390	1432	1390	1227	1177
209:	1257	1350	1257	1139	1177	1155	1179	1278
217:	1126	1128	1111	1205	1089	1173	1074	1159
225:	1108	1089	1110	1077	1094	1098	1037	1121
233:	1063	1026	1270	1808	1130	1164	1227	1034
241:	3555	8183	2085	928	889	874	883	954
249:	867	960	842	891	887	927	919	1182
257:	1014	1069	1240	900	761	870	821	834
265:	781	887	836	889	1447	1318	1420	1017
273:	859	998	1061	764	742	758	751	792
281:	822	790	746	827	805	869	806	772
289:	740	782	689	790	769	4277	16923	5134
297:	757	656	753	903	640	707	684	719
305:	657	628	619	579	649	629	610	642
313:	637	674	619	582	604	586	561	594
321:	579	624	738	743	590	606	570	628
329:	690	799	592	586	625	687	566	591
337:	635	695	658	646	581	567	591	575
345:	545	644	578	626	677	1375	15027	23896
353:	3163	450	469	446	438	474	430	469
361:	487	465	416	434	487	467	458	457
369:	480	427	436	466	465	479	439	469
377:	474	416	454	467	481	484	452	495
385:	473	580	578	592	664	500	459	475
393:	468	453	484	506	450	454	454	465
401:	633	674	483	566	678	555	465	487
409:	495	432	492	468	541	451	461	491
417:	489	469	533	470	491	485	436	452
425:	472	501	516	485	432	402	403	376

433:	356	396	393	349	367	339	347	346
441:	355	363	336	351	355	328	324	332
449:	359	324	310	340	350	408	436	345
457:	300	321	279	317	373	392	315	300
465:	329	302	307	288	360	341	310	282
473:	326	324	334	288	287	270	343	453
481:	380	303	263	294	267	386	453	322
489:	259	273	225	231	280	234	270	242
497:	245	261	260	278	269	260	242	255
505:	258	256	254	230	346	441	394	332
513:	272	261	266	212	220	215	215	244
521:	245	247	209	246	227	249	231	246
529:	227	244	238	238	308	254	219	240
537:	248	235	212	219	254	251	240	215
545:	232	208	217	223	220	207	193	206
553:	239	213	202	223	218	206	187	205
561:	215	221	230	221	227	229	212	196
569:	228	245	240	256	223	216	239	224
577:	203	207	290	355	240	240	272	225
585:	194	201	224	211	181	193	201	221
593:	209	182	218	208	220	216	245	198
601:	206	236	224	220	219	214	614	7983
609:	18210	5457	362	176	166	150	195	170
617:	176	153	168	158	158	148	162	158
625:	141	178	149	137	156	134	159	175
633:	168	164	169	151	156	161	153	163
641:	176	145	142	140	134	154	127	157
649:	162	152	149	154	147	138	129	150
657:	142	163	154	159	181	152	163	341
665:	658	337	169	136	146	158	162	143
673:	171	165	150	159	148	165	142	145
681:	140	179	147	147	148	169	172	150
689:	146	161	168	153	134	148	142	145
697:	145	163	163	144	175	279	274	198
705:	148	161	162	158	149	173	137	175
713:	144	145	155	132	158	150	234	249
721:	157	180	149	126	143	148	163	136
729:	137	141	153	143	149	157	167	131
737:	169	150	141	155	191	202	175	176
745:	120	146	146	132	143	126	148	179
753:	187	161	140	143	183	128	131	145
761:	149	152	137	138	174	290	909	1586
769:	610	189	148	129	143	153	144	138
777:	128	147	154	128	153	121	145	228
785:	417	357	196	143	115	135	129	133
793:	156	140	139	147	141	144	157	131
801:	130	141	168	166	372	475	211	143
809:	122	133	126	134	130	153	152	149
817:	129	141	129	175	195	150	136	157
825:	151	168	153	133	166	155	191	194
833:	160	167	140	151	145	299	288	163
841:	144	123	137	128	158	148	147	131
849:	149	143	137	143	148	147	133	132
857:	151	147	122	162	155	153	132	139
865:	167	143	133	126	131	135	172	158
873:	168	129	154	158	145	147	166	156
881:	143	136	149	137	137	142	144	149
889:	137	141	151	152	139	168	163	168
897:	168	158	153	148	135	145	138	173
905:	161	164	147	152	139	170	170	142

913:	136	139	133	154	145	137	135	128
921:	140	122	101	114	129	120	104	126
929:	129	165	159	274	742	759	262	131
937:	124	125	126	139	138	139	114	140
945:	126	106	132	133	128	117	112	111
953:	121	109	120	102	105	114	98	119
961:	129	144	173	202	153	124	120	125
969:	145	115	118	105	98	124	116	120
977:	111	121	103	118	110	107	107	110
985:	105	118	109	122	112	133	114	111
993:	113	91	118	108	129	110	122	189
1001:	207	130	115	123	121	113	114	124
1009:	117	105	123	105	109	94	122	112
1017:	95	95	101	98	109	102	91	123
1025:	111	123	109	100	82	79	118	137
1033:	102	82	118	100	97	101	96	105
1041:	101	97	116	101	96	107	124	103
1049:	87	131	173	135	109	86	103	92
1057:	96	92	104	111	90	89	99	69
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1081:	96	95	95	107	77	101	96	107
1089:	103	92	93	90	94	88	121	87
1097:	95	108	104	94	103	107	115	142
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1113:	80	100	94	91	119	612	2516	2852
1121:	961	144	103	103	105	78	82	80
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1145:	93	95	80	90	75	95	96	111
1153:	175	402	372	160	76	95	97	98
1161:	81	73	85	85	92	99	91	101
1169:	87	84	101	78	98	80	71	99
1177:	88	76	84	113	118	108	82	97
1185:	72	72	73	100	82	88	70	91
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1241:	74	81	68	60	77	84	73	64
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1257:	80	56	74	74	77	76	70	78
1265:	74	51	76	83	69	83	68	80
1273:	86	61	94	53	68	84	170	307
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1337:	57	64	55	70	67	71	80	74
1345:	59	74	59	69	68	62	62	53
1353:	60	58	52	81	66	74	59	64
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1377:	775	388	115	60	51	71	88	192
1385:	191	112	65	69	67	63	66	64

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1409:	132	68	58	66	82	70	58	59
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1969:	20	15	16	16	12	15	8	17
1977:	16	13	19	9	12	11	18	8
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2145:	2	4	8	7	6	7	3	9
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2169:	12	5	4	2	7	7	5	4
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2233:	4	4	1	3	2	3	5	1
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2257:	1	4	6	3	3	5	2	4
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2281:	2	2	3	0	3	1	4	2
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2321:	0	3	3	4	5	1	6	4
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2409:	4	3	2	4	1	1	1	1
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2769:	1	5	0	0	0	2	0	0
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CB 4/11/13

Sample ID : 1303013-11

Acquisition date : 1-APR-2013 16:08:09

VAX/VMS Peak Search Report Generated 1-APR-2013 17:13:35.57

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301311_GE3_GAS1202_190141.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-63-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 16:08:09.
 Sample ID : 1303013-11 Sample Quantity : 5.36940E+02 gram
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE3 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:05:12.62 8.0%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	25.51*	3281	44654	1.98	25.83	24	6	20.7		TH-231
0	31.51	1056	37499	1.10	31.83	30	5	55.3		
0	45.63*	8188	54134	1.69	45.95	45	4	8.1		PB-210
1	49.82	5531	26859	1.21	50.13	49	7	7.7	5.21E+01	TH-230 TH-227
1	52.71*	9909	60359	1.49	53.03	49	7	7.3		
0	62.89*	99254	124191	1.51	63.21	60	6	1.3		TH-230 TH-234
0	66.76	1909	90234	1.10	67.08	67	4	44.7		TH-230
1	74.82*	58946	110160	1.53	75.14	71	27	2.0	1.78E+04	AM-243
1	80.72	15259	103522	1.54	81.04	71	27	6.6		BA-133
1	83.58*	30951	81135	1.29	83.90	71	27	2.9		TH-231
1	86.82	24311	79176	1.50	87.14	71	27	3.5		NP-237 SN-126 CD-109
1	89.68	12357	77380	1.42	90.00	71	27	6.8		
1	94.68	11199	71722	1.42	95.00	71	27	8.9		
0	98.24	15836	62250	1.87	98.55	97	5	5.0		
6	109.80	6978	64122	2.56	110.11	107	11	11.8	6.94E+01	
6	112.64	14116	73194	2.34	112.96	107	11	6.7		
0	121.29	1759	48913	2.15	121.61	120	5	38.0		CO-57
0	131.30	803	48353	1.64	131.61	130	5	82.5		PA-234
2	140.82	541	29254	1.53	141.13	140	7	84.1	1.70E+00	
2	143.64*	17805	38759	1.38	143.95	140	7	3.5		U-235
0	153.84	6909	66099	1.75	154.15	151	7	12.6		
0	163.26	6644	58911	1.84	163.57	161	7	12.4		U-235
0	185.65*	89578	63571	1.35	185.96	182	8	1.2		RA-226
0	195.30	1073	33337	1.95	195.61	194	5	51.5		
4	201.62	1571	31315	1.57	201.93	200	10	34.0	9.79E+00	
4	205.02	6129	30053	1.70	205.34	200	10	8.9		U-235
0	210.67	506	27524	1.33	210.98	210	5	98.9		
2	235.76	7654	19107	1.41	236.07	232	15	5.6	2.56E+00	TH-227
2	241.80*	38093	18200	1.38	242.11	232	15	1.4		RA-224
1	255.85	4302	19589	1.76	256.16	253	10	10.3	1.45E+01	TH-227
1	258.53	3664	19315	1.76	258.84	253	10	12.4		
7	269.95	15013	32078	3.14	270.26	266	12	4.6	5.75E+01	

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4/12/13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
7	274.59	2263	17365	1.71	274.90	266	12	18.7		
0	285.08	1554	23390	3.00	285.39	283	7	33.1		
5	295.04*	81673	12995	1.44	295.35	291	12	0.8	2.29E+01	PB-214
5	299.20	3366	19209	2.64	299.50	291	12	13.7		
0	313.88	865	15771	3.06	314.19	312	6	46.4		
0	323.72	2087	18004	1.44	324.02	321	7	21.8		RA-223
0	329.57	1251	13160	1.15	329.88	328	5	28.1		
0	338.00*	1178	12770	1.78	338.30	337	5	29.4		
5	351.72*	143549	11159	1.56	352.03	348	12	0.6	7.42E+01	PB-214
5	354.93	4643	16956	2.71	355.23	348	12	19.3		BA-133
0	387.86	2163	15991	3.21	388.17	385	8	20.7		
2	401.62	2896	10110	1.57	401.92	399	11	11.1	1.88E+00	RN-219
2	404.87	1959	10201	1.78	405.17	399	11	16.2		PB-211
0	426.54	923	13142	1.58	426.84	424	7	41.9		
0	444.86	715	8661	1.74	445.16	443	6	41.9		
0	454.54	610	8503	1.34	454.84	453	6	48.6		
0	461.47	688	9664	2.37	461.77	459	7	48.0		
0	469.39*	244	6792	1.14	469.69	467	5	102.1		
2	474.91	444	6382	1.76	475.21	473	11	54.6	2.38E+00	
2	480.04	1027	7495	1.90	480.34	473	11	27.4		
0	486.93	1078	8538	1.64	487.23	484	7	29.1		
0	510.66*	1189	10140	3.10	510.96	507	9	31.1		
0	533.70	651	7406	1.91	534.00	531	7	44.5		
0	543.60	300	6222	2.15	543.90	542	6	83.8		
0	570.06	217	5939	3.43	570.35	568	6	113.1		
0	579.88	640	6036	1.75	580.17	577	6	39.2		
4	609.18*	98323	4143	1.65	609.47	603	18	0.7	1.93E+01	BI-214
4	612.32	2829	5359	2.23	612.61	603	18	23.6		
0	632.40	375	4911	5.19	632.69	630	7	62.9		
0	665.42	2755	6227	1.98	665.71	662	9	11.0		
0	675.32	246	3936	5.49	675.61	673	6	81.8		
0	681.96	245	4012	2.33	682.25	680	6	82.5		
0	703.11	679	5080	2.01	703.39	700	7	35.6		
0	719.90	859	5156	1.90	720.19	717	8	29.8		
0	742.30	1343	5727	2.15	742.59	739	9	21.0		
0	752.51	268	3059	1.36	752.79	751	5	63.2		
0	767.90	11521	8270	2.38	768.18	762	13	3.7		
0	785.81	2218	5188	1.85	786.10	782	8	12.0		
0	806.02	1969	5424	1.92	806.31	802	9	14.2		
0	830.96	1104	6645	1.88	831.24	825	11	29.3		PB-211
0	839.01	1170	4739	1.90	839.29	836	8	21.2		
0	903.79	217	4141	1.83	904.07	902	7	99.2		
0	934.14	4691	5238	1.98	934.42	930	10	6.5		
0	945.85	344	3490	1.96	946.13	943	7	58.0		PA-234
0	964.05	604	3312	2.24	964.33	961	7	32.6		
0	1001.03*	5223	5030	2.05	1001.31	996	11	5.9		PA-234M
0	1051.71	393	2643	2.20	1051.99	1049	7	44.6		
0	1068.69	325	3875	1.49	1068.96	1064	10	72.4		
0	1104.30	237	2527	2.83	1104.57	1101	7	71.4		
0	1120.29*	20168	4523	2.17	1120.56	1115	12	1.9		BI-214
0	1133.21	291	2822	1.99	1133.48	1130	8	64.4		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1155.18	2075	3249	2.13	1155.45	1151	9	10.8		
0	1181.45	435	2447	2.44	1181.71	1178	8	40.5		
0	1207.49	451	2079	2.03	1207.75	1205	7	34.8		
0	1238.10*	7407	3566	2.17	1238.37	1232	12	4.0		
0	1253.25	499	2433	3.12	1253.51	1249	9	36.7		
0	1281.04	1639	2529	2.18	1281.30	1277	9	12.1		
0	1317.26	105	1490	2.05	1317.52	1314	6	117.6		
3	1377.64	4915	1410	2.06	1377.89	1373	18	3.7	2.70E+00	
3	1381.52	184	1620	2.41	1381.78	1373	18	98.2		
3	1385.23	1062	1606	2.43	1385.49	1373	18	14.1		
0	1393.35	183	1601	3.10	1393.61	1391	7	73.8		
2	1401.54	1549	1632	2.32	1401.80	1398	15	10.1	1.52E+00	
2	1408.00	2598	1694	2.22	1408.25	1398	15	6.5		
0	1460.51*	664	2617	2.81	1460.76	1455	11	30.8		K-40
0	1509.22	2422	2888	2.40	1509.47	1505	11	9.5		
0	1538.55	322	1599	2.08	1538.80	1536	6	40.8		
0	1543.69	372	1381	2.52	1543.94	1542	6	33.5		
0	1583.32	757	1329	2.19	1583.56	1580	8	18.2		
0	1594.36	295	1073	1.83	1594.60	1592	6	36.9		
0	1599.52	300	990	1.76	1599.77	1598	6	35.3		
0	1606.76	98	1121	1.98	1607.01	1604	7	114.6		
0	1661.43	1017	1164	2.39	1661.68	1657	11	14.5		
2	1680.22	65	236	2.27	1680.46	1679	10	66.2	3.17E+00	
2	1683.84	224	677	2.54	1684.09	1679	10	42.6		
0	1692.84	284	1003	3.11	1693.08	1689	11	44.8		
0	1729.71	3245	1248	2.35	1729.95	1723	14	5.8		
0	1764.65*	15740	1062	2.40	1764.89	1758	14	1.8		BI-214
0	1838.38	301	457	2.47	1838.62	1836	7	26.2		
0	1847.57	2165	765	2.35	1847.81	1843	12	6.7		
0	1874.38	114	652	2.27	1874.61	1869	9	82.8		
2	1890.00	105	453	2.83	1890.23	1886	15	72.5	2.16E+00	
2	1895.84	158	520	2.87	1896.07	1886	15	54.4		
0	1936.94	156	531	2.18	1937.17	1933	9	55.8		
0	1974.85	48	219	1.91	1975.08	1973	5	97.5		
1	2109.90	81	180	2.68	2110.12	2104	23	60.8	6.87E-01	
1	2118.69	1012	178	2.56	2118.91	2104	23	7.8		
0	2149.16	36	120	2.68	2149.38	2146	8	110.2		
0	2192.37	46	156	1.87	2192.59	2189	8	97.9		
0	2204.39*	4221	262	2.56	2204.61	2199	13	3.5		BI-214
0	2294.23	237	112	3.25	2294.45	2289	14	23.5		
0	2407.95	18	17	6.24	2408.16	2403	10	99.1		
0	2448.03	1199	60	2.71	2448.24	2441	15	6.4		
0	2572.48	8	2	2.55	2572.68	2568	8	94.1		
0	2578.67	8	0	1.47	2578.88	2576	7	70.7		
0	2614.55*	29	3	1.70	2614.75	2610	10	44.9		
0	2695.97	27	10	1.36	2696.16	2689	14	64.2		
0	2770.06	22	6	2.80	2770.25	2765	12	61.7		
0	2880.31	8	0	1.98	2880.50	2876	9	70.7		
0	2923.36	9	2	3.23	2923.54	2918	9	92.3		
0	2978.50	8	2	1.38	2978.68	2974	8	90.7		
0	3054.47	17	0	1.74	3054.65	3050	10	48.5		

Total number of lines in spectrum 134
Number of unidentified lines 78
Number of lines tentatively identified by NID 56 41.79%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
K-40	1.28E+09Y	1.00	2.427E+01	2.427E+01	0.791E+01	32.60	
PB-210	22.26Y	1.00	1.182E+02	1.185E+02	0.144E+02	12.15	
PB-211	3.28E+04Y	1.00	8.743E+01	8.743E+01	1.435E+01	16.41	
BI-214	1602.00Y	1.00	4.231E+02	4.231E+02	0.237E+02	5.60	
PB-214	1602.00Y	1.00	4.271E+02	4.271E+02	0.475E+02	11.12	
RN-219	3.28E+04Y	1.00	5.622E+01	5.623E+01	0.843E+01	14.99	
RA-223	3.28E+04Y	1.00	5.654E+01	5.654E+01	1.539E+01	27.22	
RA-224	1.41E+10Y	1.00	8.063E+02	8.063E+02	1.266E+02	15.71	
RA-226	1602.00Y	1.00	1.925E+03	1.925E+03	3.528E+03	183.28	
TH-227	3.28E+04Y	1.00	5.657E+01	5.657E+01	0.711E+01	12.57	
PA-234	4.47E+09Y	1.00	3.147E+00	3.147E+00	1.789E+00	56.85	
PA-234M	4.47E+09Y	1.00	1.627E+03	1.627E+03	0.213E+03	13.06	
TH-234	4.47E+09Y	1.00	1.429E+03	1.429E+03	0.125E+03	8.74	
U-235	7.04E+08Y	1.00	9.852E+01	9.852E+01	1.229E+01	12.48	
Total Activity :			7.138E+03	7.139E+03			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
CO-57	270.90D	1.08	1.186E+00	1.279E+00	0.510E+00	39.88	
CD-109	464.00D	1.05	3.506E+02	3.665E+02	0.475E+02	12.97	
SN-126	1.00E+05Y	1.00	3.523E+01	3.523E+01	0.405E+01	11.49	
BA-133	10.50Y	1.01	8.801E+00	8.848E+00	2.268E+00	25.63	
TH-231	7.04E+08Y	1.00	2.338E+01	2.338E+01	0.590E+01	25.24	
NP-237	2.14E+06Y	1.00	1.034E+02	1.034E+02	0.118E+02	11.38	
Total Activity :			5.226E+02	5.386E+02			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
			Uncorrected pCi/gram	Decay Corr pCi/gram			
TH-230	7.70E+04Y	1.00	2.788E+02	2.788E+02	1.271E+02	45.58	
AM-243	7380.00Y	1.00	4.778E+01	4.778E+01	0.469E+01	9.82	
Total Activity :			3.265E+02	3.265E+02			

Grand Total Activity : 7.987E+03 8.004E+03

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma	Status
				pCi/gram	pCi/gram	%Error	
K-40	1460.81	10.67*	3.586E-01	2.427E+01	2.427E+01	32.60	OK
Final Mean for 1 Valid Peaks = 2.427E+01+/- 7.913E+00 (32.60%)							
PB-210	46.50	4.25*	2.278E+00	1.182E+02	1.185E+02	12.15	OK
Final Mean for 1 Valid Peaks = 1.185E+02+/- 1.440E+01 (12.15%)							
PB-211	404.84	2.90*	1.101E+00	8.581E+01	8.581E+01	19.12	OK
	831.96	2.90	5.742E-01	9.270E+01	9.270E+01	31.94	OK
Final Mean for 2 Valid Peaks = 8.743E+01+/- 1.435E+01 (16.41%)							
BI-214	609.31	46.30*	7.618E-01	3.898E+02	3.898E+02	12.61	OK
	1120.29	15.10	4.433E-01	4.213E+02	4.213E+02	10.53	OK
	1764.49	15.80	3.132E-01	4.448E+02	4.448E+02	10.38	OK
	2204.22	4.98	2.726E-01	4.348E+02	4.348E+02	11.64	OK
Final Mean for 4 Valid Peaks = 4.231E+02+/- 2.369E+01 (5.60%)							
PB-214	295.21	19.19	1.434E+00	4.151E+02	4.151E+02	18.36	OK
	351.92	37.19*	1.241E+00	4.348E+02	4.348E+02	13.98	OK
Final Mean for 2 Valid Peaks = 4.271E+02+/- 4.752E+01 (11.12%)							
RN-219	401.80	6.50*	1.108E+00	5.622E+01	5.623E+01	14.99	OK
Final Mean for 1 Valid Peaks = 5.623E+01+/- 8.429E+00 (14.99%)							
RA-223	323.87	3.88*	1.330E+00	5.654E+01	5.654E+01	27.22	OK
Final Mean for 1 Valid Peaks = 5.654E+01+/- 1.539E+01 (27.22%)							
RA-224	240.98	3.95*	1.672E+00	8.063E+02	8.063E+02	15.71	OK
Final Mean for 1 Valid Peaks = 8.063E+02+/- 1.266E+02 (15.71%)							
RA-226	186.21	3.28*	1.984E+00	1.925E+03	1.925E+03	183.28	OK
Final Mean for 1 Valid Peaks = 1.925E+03+/- 3.528E+03 (183.28%)							
TH-227	50.10	8.40	2.364E+00	3.893E+01	3.893E+01	11.71	<<WM Interf
	236.00	11.50*	1.698E+00	5.482E+01	5.482E+01	16.19	OK
	256.20	6.30	1.599E+00	5.971E+01	5.971E+01	19.91	OK
Final Mean for 2 Valid Peaks = 5.657E+01+/- 7.112E+00 (12.57%)							
PA-234	131.20	20.40*	2.363E+00	2.329E+00	2.329E+00	83.26	OK
	733.99	8.80	6.429E-01	-----	Line Not Found	-----	Absent

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
	946.00	12.00	5.125E-01	7.828E+00	7.828E+00	59.25	OK

Final Mean for 2 Valid Peaks = 3.147E+00+/- 1.789E+00 (56.85%)

PA-234M	1001.03	0.92*	4.879E-01	1.627E+03	1.627E+03	13.06	OK
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Final Mean for 1 Valid Peaks = 1.627E+03+/- 2.126E+02 (13.06%)

TH-234	63.29	3.80*	2.556E+00	1.429E+03	1.429E+03	8.74	OK
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Final Mean for 1 Valid Peaks = 1.429E+03+/- 1.249E+02 (8.74%)

U-235	143.76	10.50*	2.274E+00	1.043E+02	1.043E+02	19.15	OK
	163.35	4.70	2.136E+00	9.253E+01	9.253E+01	23.38	OK
	205.31	4.70	1.866E+00	9.770E+01	9.770E+01	23.04	OK

Final Mean for 3 Valid Peaks = 9.852E+01+/- 1.229E+01 (12.48%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CO-57	122.06	85.51*	2.427E+00	1.186E+00	1.279E+00	39.88	OK
	136.48	10.60	2.326E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 1.279E+00+/- 5.101E-01 (39.88%)

CD-109	88.03	3.72*	2.606E+00	3.506E+02	3.665E+02	12.97	OK
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Final Mean for 1 Valid Peaks = 3.665E+02+/- 4.752E+01 (12.97%)

SN-126	87.57	37.00*	2.607E+00	3.523E+01	3.523E+01	11.49	OK
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Final Mean for 1 Valid Peaks = 3.523E+01+/- 4.048E+00 (11.49%)

BA-133	81.00	33.00	2.618E+00	2.470E+01	2.483E+01	18.07	<<WM N-Sigma
	302.84	17.80	1.405E+00	-----	Line Not Found	-----	Absent
	356.01	60.00*	1.229E+00	8.801E+00	8.848E+00	25.63	OK
	383.85	8.70	1.153E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 8.848E+00+/- 2.268E+00 (25.63%)

TH-231	25.64	14.70*	1.335E+00	2.338E+01	2.338E+01	25.24	OK
	84.21	6.40	2.614E+00	2.586E+02	2.586E+02	10.94	<<WM N-Sigma

Final Mean for 1 Valid Peaks = 2.338E+01+/- 5.901E+00 (25.24%)

NP-237	86.50	12.60*	2.610E+00	1.034E+02	1.034E+02	11.38	OK
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Final Mean for 1 Valid Peaks = 1.034E+02+/- 1.176E+01 (11.38%)

Sample ID : 1303013-11

Acquisition date : 1-APR-2013 16:08:09

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/gram	pCi/gram	%Error	
TH-230	48.44	16.90	2.327E+00	1.967E+01	1.967E+01	11.99	<<WM Interf
	62.85	4.60	2.552E+00	1.182E+03	1.182E+03	8.71	<<WM Interf
	67.67	0.37*	2.587E+00	2.788E+02	2.788E+02	45.58	OK

Final Mean for 1 Valid Peaks = 2.788E+02+/- 1.271E+02 (45.58%)

AM-243	74.67	66.00*	2.614E+00	4.778E+01	4.778E+01	9.82	OK
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Final Mean for 1 Valid Peaks = 4.778E+01+/- 4.693E+00 (9.82%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	2.427E+01	7.913E+00	6.958E+00	6.828E-01	3.489
CO-57	1.279E+00	5.101E-01	7.038E-01	7.942E-02	1.817
CD-109	3.665E+02	4.752E+01	2.142E+01	2.531E+00	17.110
SN-126	3.523E+01	4.048E+00	2.059E+00	2.094E-01	17.114
BA-133	8.848E+00	2.268E+00	9.522E-01	1.561E-01	9.292
PB-210	1.185E+02	1.440E+01	1.408E+01	1.145E+00	8.419
PB-211	8.743E+01	1.435E+01	2.105E+01	1.950E+00	4.154
BI-214	4.231E+02	2.369E+01	1.252E+00	1.495E-01	337.900
PB-214	4.271E+02	4.752E+01	1.512E+00	2.023E-01	282.502
RN-219	5.623E+01	8.429E+00	9.323E+00	8.597E-01	6.031
RA-223	5.654E+01	1.539E+01	1.443E+01	2.287E+00	3.919
RA-224	8.063E+02	1.266E+02	1.453E+01	2.197E+00	55.491
RA-226	1.925E+03	3.528E+03	1.887E+01	3.458E+01	102.002
TH-227	5.657E+01	7.112E+00	4.910E+00	7.203E-01	11.522
TH-230	2.788E+02	1.271E+02	2.061E+02	1.661E+01	1.352
TH-231	2.338E+01	5.901E+00	5.683E+00	7.890E-01	4.114
PA-234	3.147E+00	1.789E+00	2.798E+00	3.046E-01	1.125
PA-234M	1.627E+03	2.126E+02	7.754E+01	8.470E+00	20.983
TH-234	1.429E+03	1.249E+02	2.013E+01	1.544E+00	70.966
U-235	9.852E+01	1.229E+01	5.680E+00	1.046E+00	17.344
NP-237	1.034E+02	1.176E+01	6.036E+00	6.064E-01	17.124
AM-243	4.778E+01	4.693E+00	1.143E+00	9.993E-02	41.793

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	1.075E+01		6.729E+00	8.336E+00	8.600E-01	1.290
NA-22	1.184E-01		4.952E-01	7.256E-01	6.704E-02	0.163
AL-26	-1.586E-01		2.505E-01	4.277E-01	3.987E-02	-0.371
TI-44	1.093E+00	+	4.982E-01	8.216E-01	6.636E-02	1.330
SC-46	-9.023E-02		5.659E-01	9.390E-01	1.106E-01	-0.096
V-48	1.213E+00		1.563E+00	2.604E+00	2.886E-01	0.466
CR-51	1.709E+00		9.455E+00	1.187E+01	1.946E+00	0.144
MN-54	1.625E+00		6.501E-01	7.744E-01	9.409E-02	2.098
CO-56	8.030E-02		5.999E-01	8.970E-01	1.083E-01	0.090
CO-58	2.141E-01		5.962E-01	8.961E-01	1.101E-01	0.239
FE-59	-5.523E-01		1.344E+00	1.959E+00	2.046E-01	-0.282
CO-60	2.252E-01		4.840E-01	7.154E-01	6.279E-02	0.315
ZN-65	5.604E+00		1.261E+00	1.787E+00	1.719E-01	3.136
SE-75	-1.030E+00		9.016E-01	1.103E+00	1.919E-01	-0.933
RB-82	-8.948E-01		9.313E+00	1.105E+01	1.371E+00	-0.081
RB-83	4.896E-01		9.771E-01	1.591E+00	2.703E-01	0.308
KR-85	1.563E+02		8.962E+01	1.370E+02	1.481E+01	1.140
SR-85	9.335E-01		5.354E-01	8.187E-01	8.845E-02	1.140
Y-88	1.313E+00		4.530E-01	7.318E-01	6.783E-02	1.795
NB-93M	2.834E+02		8.096E+01	2.390E+01	6.664E+00	11.858
NB-94	-1.931E-02		4.292E-01	7.140E-01	8.507E-02	-0.027

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
NB-95	3.488E+01		4.671E+00	2.100E+00	2.613E-01	16.613
ZR-95	-8.883E-01		1.336E+00	1.559E+00	2.039E-01	-0.570
RU-103	-2.965E-01		6.294E-01	1.066E+00	1.645E-01	-0.278
RU-106	1.196E+00		4.004E+00	6.098E+00	9.638E-01	0.196
AG-108M	6.230E-01		4.643E-01	7.019E-01	8.782E-02	0.887
AG-110M	3.497E-02		4.503E-01	6.824E-01	8.486E-02	0.051
SN-113	5.530E-01		7.052E-01	1.096E+00	1.021E-01	0.505
TE123M	1.357E-01		6.650E-01	8.601E-01	8.238E-02	0.158
SB-124	4.080E-01		5.766E-01	8.804E-01	1.045E-01	0.463
I-125	-1.850E+01		8.994E+00	1.331E+01	1.307E+00	-1.389
SB-125	4.282E+00	+	1.850E+00	2.200E+00	2.148E-01	1.946
SB-126	1.795E+01	+	5.841E+00	6.597E+00	8.255E-01	2.721
SB-127	2.281E+02		2.351E+02	3.572E+02	4.467E+01	0.639
I-129	1.298E+00		9.150E-01	1.235E+00	1.436E-01	1.051
I-131	1.055E+00		5.292E+00	8.734E+00	1.059E+00	0.121
CS-134	3.841E+00		6.614E-01	7.518E-01	8.949E-02	5.110
CS-135	5.648E+01		1.056E+01	4.344E+00	7.698E-01	13.003
CS-136	3.454E+00		2.794E+00	4.179E+00	4.453E-01	0.827
CS-137	6.913E-01		4.733E-01	7.173E-01	8.954E-02	0.964
LA-138	6.882E-01		6.828E-01	1.124E+00	1.077E-01	0.612
CE-139	2.514E+00		6.385E-01	8.808E-01	8.117E-02	2.855
BA-140	7.056E+00		9.833E+00	1.177E+01	3.986E+00	0.600
LA-140	9.363E+00		3.482E+00	4.197E+00	4.021E-01	2.231
CE-141	3.419E+01		8.792E+00	2.689E+00	6.702E-01	12.714
CE-144	2.750E+00		3.875E+00	5.743E+00	6.193E-01	0.479
PM-144	7.414E-02		4.286E-01	6.483E-01	8.118E-02	0.114
PM-145	-4.440E+00		3.436E+00	2.786E+00	1.817E+00	-1.594
PM-146	2.168E+00	+	1.079E+00	1.502E+00	1.500E-01	1.443
ND-147	3.155E+01		1.918E+01	2.932E+01	3.231E+00	1.076
EU-152	6.620E+01	+	9.246E+00	7.758E+00	9.055E-01	8.533
GD-153	2.299E+00		2.095E+00	2.746E+00	2.912E-01	0.837
EU-154	5.823E-01		1.369E+00	2.013E+00	1.860E-01	0.289
EU-155	4.263E+01	+	4.851E+00	2.695E+00	2.707E-01	15.817
EU-156	-8.575E+00		1.675E+01	2.466E+01	6.029E+00	-0.348
HO-166M	-1.215E+00		8.587E-01	1.133E+00	1.418E-01	-1.072
HF-172	7.335E-01		3.924E+00	5.121E+00	5.693E-01	0.143
LU-172	5.370E+00		1.461E+01	2.418E+01	2.393E+00	0.222
LU-173	4.477E+01		8.533E+00	3.454E+00	6.255E-01	12.961
HF-175	3.426E-01		7.446E-01	9.323E-01	1.322E-01	0.368
LU-176	-1.312E+00		4.789E-01	5.873E-01	1.006E-01	-2.234
TA-182	2.184E+02	+	2.296E+01	7.546E+00	7.192E-01	28.936
IR-192	9.689E-01	+	9.953E-01	1.600E+00	1.629E-01	0.606
HG-203	3.854E-01		9.009E-01	1.137E+00	2.155E-01	0.339
BI-207	3.844E-01	+	4.371E-01	6.233E-01	7.162E-02	0.617
TL-208	1.899E+00		1.330E+00	2.028E+00	2.363E-01	0.936
BI-210M	1.316E+00		1.001E+00	1.248E+00	2.135E-01	1.054
BI-212	-9.979E-02		3.462E+00	5.210E+00	6.517E-01	-0.019
PB-212	1.094E+01		1.894E+00	1.440E+00	2.147E-01	7.597

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
RA-225	-1.243E+01		4.849E+00	7.672E+00	6.855E-01	-1.620
AC-228	6.604E-01		1.783E+00	2.662E+00	3.095E-01	0.248
PA-231	6.237E+01		2.050E+01	2.547E+01	4.435E+00	2.449
PA-233	2.429E+00		2.231E+00	3.093E+00	8.246E-01	0.785
AM-241	1.899E+01		2.077E+00	2.113E+00	1.555E-01	8.988
CM-243	1.161E-01		2.798E+00	4.040E+00	7.544E-01	0.029

Total number of lines in spectrum 134
Number of unidentified lines 78
Number of lines tentatively identified by NID 56 41.79%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
K-40	1.28E+09Y	1.00	2.427E+01	2.427E+01	0.791E+01	32.60	
PB-210	22.26Y	1.00	1.182E+02	1.185E+02	0.144E+02	12.15	
PB-211	3.28E+04Y	1.00	8.743E+01	8.743E+01	1.435E+01	16.41	
BI-214	1602.00Y	1.00	4.231E+02	4.231E+02	0.237E+02	5.60	
PB-214	1602.00Y	1.00	4.271E+02	4.271E+02	0.475E+02	11.12	
RN-219	3.28E+04Y	1.00	5.622E+01	5.623E+01	0.843E+01	14.99	
RA-223	3.28E+04Y	1.00	5.654E+01	5.654E+01	1.539E+01	27.22	
RA-224	1.41E+10Y	1.00	8.063E+02	8.063E+02	1.266E+02	15.71	
RA-226	1602.00Y	1.00	1.925E+03	1.925E+03	3.528E+03	183.28	
TH-227	3.28E+04Y	1.00	5.657E+01	5.657E+01	0.711E+01	12.57	
PA-234	4.47E+09Y	1.00	3.147E+00	3.147E+00	1.789E+00	56.85	
PA-234M	4.47E+09Y	1.00	1.627E+03	1.627E+03	0.213E+03	13.06	
TH-234	4.47E+09Y	1.00	1.429E+03	1.429E+03	0.125E+03	8.74	
U-235	7.04E+08Y	1.00	9.852E+01	9.852E+01	1.229E+01	12.48	
Total Activity :			7.138E+03	7.139E+03			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
CO-57	270.90D	1.08	1.186E+00	1.279E+00	0.510E+00	39.88	
CD-109	464.00D	1.05	3.506E+02	3.665E+02	0.475E+02	12.97	
SN-126	1.00E+05Y	1.00	3.523E+01	3.523E+01	0.405E+01	11.49	
BA-133	10.50Y	1.01	8.801E+00	8.848E+00	2.268E+00	25.63	
TH-231	7.04E+08Y	1.00	2.338E+01	2.338E+01	0.590E+01	25.24	
NP-237	2.14E+06Y	1.00	1.034E+02	1.034E+02	0.118E+02	11.38	
Total Activity :			5.226E+02	5.386E+02			

Nuclide Type : ACTIVATION

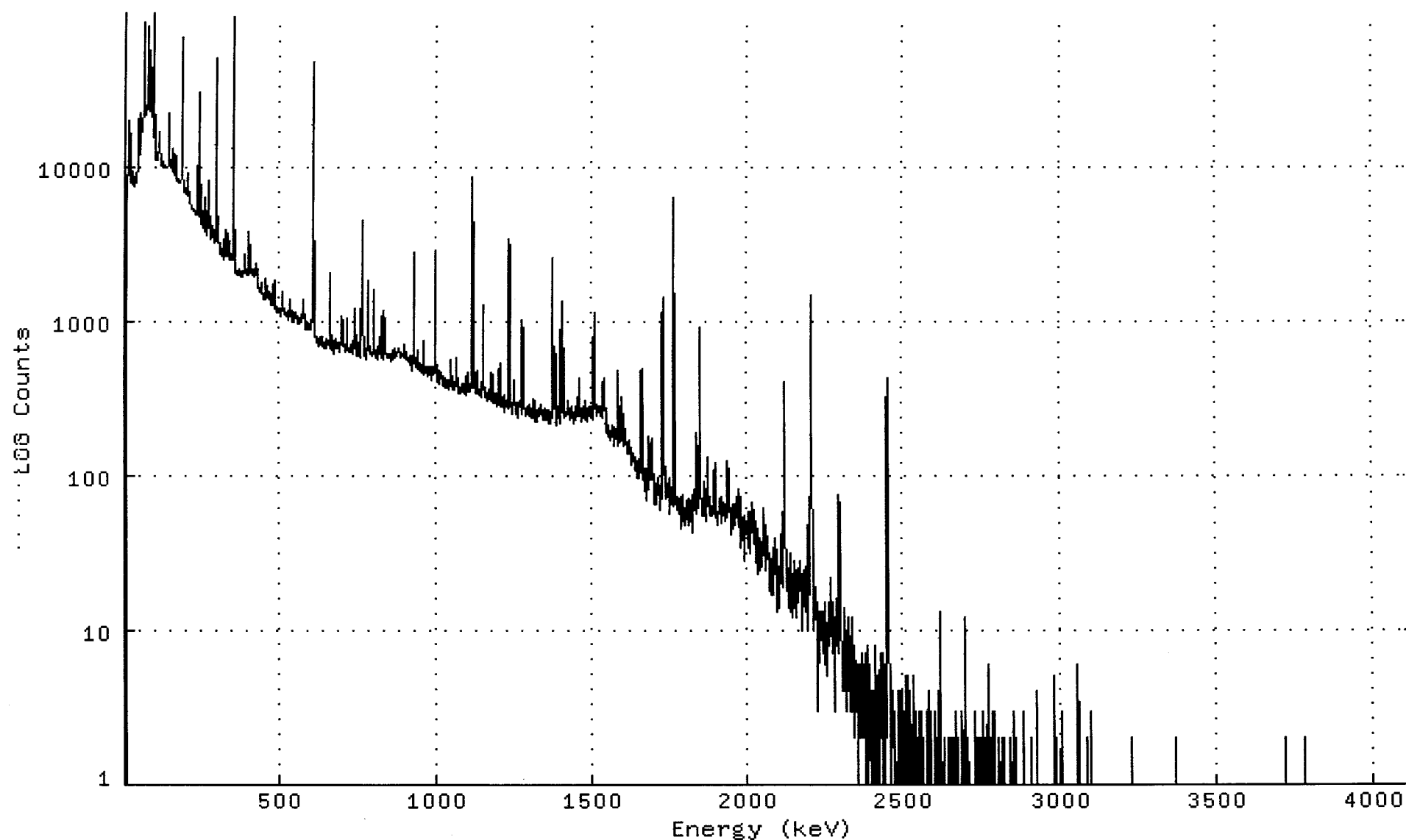
Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
TH-230	7.70E+04Y	1.00	2.788E+02	2.788E+02	1.271E+02	45.58	
AM-243	7380.00Y	1.00	4.778E+01	4.778E+01	0.469E+01	9.82	
Total Activity :			3.265E+02	3.265E+02			

Grand Total Activity : 7.987E+03 8.004E+03

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301311_GE3_GAS1202_190141.CNF;1
Title :
Sample Title: MQZ-63-130303
Start Time: 1-APR-2013 16:08: Sample Time: 3-MAR-2013 00:00: Energy Offset: -3.21163E-01
Real Time : 0 01:05:12.62 Sample ID : 1303013-11 Energy Slope : 1.00005E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301311_GE3_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	5
9:	2605	8701	8714	9765	13728	9704	12037	19661
17:	13615	9593	11823	10296	8143	7658	7526	7681
25:	8483	9048	7990	7549	7242	7422	7500	8430
33:	7672	7531	7694	8126	8394	8080	8298	8818
41:	9192	9528	10061	10423	11345	19016	20066	11944
49:	13477	17646	15481	15629	21770	18288	16375	16699
57:	17420	18518	19778	21010	21915	25526	82626	51498
65:	20920	21019	22724	24525	22336	22558	23371	23264
73:	24583	33476	55034	33000	78853	38107	25504	24629
81:	31056	22433	26269	42333	23046	20386	33968	26810
89:	21390	27496	20273	70896	98977	29106	25261	16099
97:	14012	21313	19759	12100	10902	11061	11087	10868
105:	11315	11240	10706	11326	12722	12631	14167	13724
113:	16594	12298	11356	10432	10101	9990	9942	9923
121:	10591	10532	10002	9624	9745	9800	9623	9806
129:	9643	9703	10077	9884	9820	9672	9666	9685
137:	9575	9685	9714	9862	10092	9919	12986	21778
145:	12178	9567	9692	9717	9725	9653	9866	9899
153:	10029	12969	11506	9527	9212	9203	9435	8880
161:	8741	8762	11884	11081	8464	8341	8282	7987
169:	8105	8106	8010	7930	7872	7834	7892	7944
177:	7881	7789	7692	7875	7983	8021	8199	8210
185:	24851	66272	21395	8207	8030	7764	7206	6843
193:	6790	6831	7208	7024	6718	6629	6519	6469
201:	6600	7162	6591	6417	8983	8243	5773	5725
209:	5733	5689	5935	5626	5439	5341	5403	5285
217:	5400	5296	5313	5126	5231	5058	5098	5045
225:	5115	4983	5123	5015	5025	4843	4833	4950
233:	4806	4863	5823	9840	6246	4731	4826	4765
241:	8983	30038	12586	4716	4587	4448	4287	4216
249:	4141	4153	4163	4028	3996	4119	4294	6181
257:	5532	4949	5904	4304	3758	3804	3742	3614
265:	3753	3585	3594	3771	6962	7974	7479	5993
273:	3936	4094	4662	3716	3436	3414	3372	3461
281:	3626	3404	3421	3770	3554	4040	3628	3309
289:	3222	3358	3208	3294	3222	7665	49500	33290
297:	5114	3793	4081	4644	3426	3130	3260	3237
305:	3106	2744	2814	2650	2741	2661	2656	2698
313:	2859	2908	2886	2681	2604	2585	2626	2614
321:	2494	2678	2928	3816	2974	2633	2568	2603
329:	2755	3676	2786	2591	2735	2909	2755	2491
337:	2608	3227	3038	2527	2553	2561	2667	2496
345:	2502	2553	2473	2459	2909	3500	26450	91686
353:	30102	4189	3682	3489	2676	2352	2066	2026
361:	2059	1984	2006	2044	1981	2042	2025	1958
369:	2019	1970	2004	2131	1960	1910	1974	1987
377:	2066	1931	1979	2052	1958	1934	1928	2073
385:	1996	2223	2569	2486	2700	2163	2075	1942
393:	2002	2151	1994	2044	2044	2017	1983	2072
401:	2571	3797	2514	2290	3079	2588	2128	2046
409:	2081	2040	2058	2105	1975	2125	1956	2007
417:	2066	1921	2024	2122	1996	1982	2023	2042
425:	2071	1985	2303	2051	1860	1753	1781	1785

433:	1603	1598	1637	1627	1562	1548	1600	1539
441:	1530	1492	1529	1606	1782	1579	1444	1436
449:	1359	1447	1465	1467	1459	1557	1837	1500
457:	1380	1380	1392	1457	1559	1654	1514	1391
465:	1385	1368	1402	1356	1393	1537	1352	1329
473:	1259	1394	1489	1326	1293	1285	1326	1694
481:	1630	1288	1198	1258	1220	1330	1800	1519
489:	1255	1234	1193	1225	1211	1212	1127	1124
497:	1175	1196	1162	1197	1128	1124	1188	1077
505:	1096	1111	1154	1154	1181	1442	1523	1464
513:	1251	1127	1103	1141	1132	1144	1079	1135
521:	1121	1109	1116	1068	1073	1056	1094	1015
529:	1144	1022	999	1063	1242	1375	1161	1100
537:	1117	1072	1078	1030	1028	998	1150	1167
545:	1093	1086	1028	1080	974	1003	1122	1030
553:	1032	1021	1033	1026	1020	994	982	980
561:	944	1062	954	947	1030	1012	1036	977
569:	1083	1073	1016	1038	969	987	984	1023
577:	1039	1027	1049	1358	1227	976	999	1028
585:	910	885	901	959	913	866	929	897
593:	964	940	898	955	875	946	931	941
601:	870	878	938	972	1012	965	1123	6935
609:	46060	42747	6207	1759	1845	1412	1089	960
617:	854	775	783	719	768	749	716	788
625:	728	708	735	736	682	746	783	771
633:	772	763	744	707	678	788	683	774
641:	741	716	722	658	699	691	678	721
649:	745	731	668	720	681	751	699	727
657:	699	718	745	696	714	701	653	836
665:	1752	2019	929	717	691	684	676	641
673:	684	710	689	730	674	695	608	677
681:	695	713	765	735	672	703	684	714
689:	653	671	681	711	630	639	699	674
697:	686	705	718	725	690	798	1074	987
705:	789	696	762	758	689	687	680	696
713:	623	658	657	652	649	668	810	1048
721:	856	676	667	641	639	629	639	656
729:	667	635	626	627	688	708	626	617
737:	706	655	608	723	792	977	1176	830
745:	677	658	629	651	593	606	625	658
753:	793	662	589	630	625	614	611	582
761:	655	613	670	596	809	1758	2285	4468
769:	4367	1326	794	776	671	658	618	657
777:	611	551	615	605	620	657	616	650
785:	1062	1814	1279	689	639	675	638	610
793:	630	669	622	635	633	628	622	605
801:	583	601	623	602	754	1570	1334	695
809:	600	614	609	595	604	571	587	564
817:	625	659	626	603	772	634	608	599
825:	679	725	688	589	590	581	782	1065
833:	834	659	557	591	592	749	1145	936
841:	636	650	610	603	605	583	607	597
849:	608	582	570	603	595	602	582	594
857:	600	578	577	606	546	548	606	601
865:	604	588	603	643	566	592	626	580
873:	615	658	628	599	618	625	583	622
881:	627	587	669	664	635	617	662	642
889:	570	626	586	606	598	602	600	599
897:	609	603	592	592	581	605	598	707
905:	673	608	604	563	618	612	609	596

913:	558	550	574	545	578	545	508	555
921:	530	597	546	555	573	591	596	517
929:	536	535	474	567	1137	2742	2058	738
937:	577	577	524	505	560	505	530	528
945:	547	637	572	531	489	480	470	490
953:	494	524	488	478	456	491	497	508
961:	470	494	580	737	662	524	449	473
969:	503	467	469	483	474	476	440	497
977:	457	496	455	475	501	502	483	501
985:	446	459	462	408	461	469	500	467
993:	475	505	495	451	485	486	519	1257
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1017:	445	460	423	458	459	421	465	428
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1065:	392	377	418	390	433	570	470	381
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1081:	372	371	339	371	374	392	371	343
1089:	388	368	341	352	374	363	385	392
1097:	395	374	328	380	343	364	406	454
1105:	446	405	346	375	354	381	384	377
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1129:	340	374	363	369	441	475	382	349
1137:	360	339	335	345	359	336	359	329
1145:	354	326	342	337	363	400	321	368
1153:	374	605	1272	1163	506	356	359	364
1161:	364	329	346	323	334	342	342	319
1169:	323	304	343	318	334	358	307	342
1177:	299	301	331	349	379	457	442	327
1185:	296	325	307	309	338	304	314	292
1193:	336	342	302	333	290	279	315	303
1201:	309	310	325	301	289	296	452	533
1209:	387	292	281	316	304	317	278	301
1217:	305	299	303	322	295	332	300	257
1225:	278	276	285	299	291	298	293	269
1233:	292	320	286	397	1284	3392	2831	826
1241:	391	357	329	299	249	294	282	277
1249:	268	286	310	327	413	394	372	283
1257:	279	258	272	295	275	255	236	293
1265:	286	237	276	265	279	283	279	285
1273:	276	283	326	281	281	251	301	581
1281:	1009	801	353	321	270	292	284	259
1289:	244	253	245	264	246	251	252	275
1297:	247	274	254	244	272	271	282	284
1305:	271	237	267	260	232	238	256	240
1313:	247	249	232	266	306	296	246	251
1321:	276	222	241	254	219	224	260	243
1329:	249	227	252	244	251	249	256	258
1337:	283	258	250	252	251	274	243	259
1345:	262	244	235	230	235	262	236	268
1353:	254	226	257	225	246	225	238	263
1361:	239	259	251	257	245	240	216	213
1369:	225	223	246	240	239	270	232	482
1377:	1541	2500	1223	385	289	311	272	323
1385:	621	584	354	262	238	210	245	260

1393:	272	276	242	246	243	216	237	326
1401:	699	863	494	308	257	293	672	1336
1409:	1040	428	285	234	260	267	274	250
1417:	240	243	257	255	257	244	260	250
1425:	273	305	249	253	246	239	241	241
1433:	268	229	262	281	247	241	235	232
1441:	236	214	256	240	258	252	229	239
1449:	256	248	277	245	255	241	239	272
1457:	256	264	295	349	428	388	286	258
1465:	249	223	256	246	264	272	240	268
1473:	265	236	274	250	242	250	258	301
1481:	226	268	253	252	261	269	264	224
1489:	249	271	278	261	256	242	257	267
1497:	252	273	262	268	243	270	284	230
1505:	272	273	293	562	1093	1114	545	331
1513:	287	267	273	270	289	265	261	241
1521:	260	281	255	263	253	254	241	260
1529:	249	246	248	268	282	235	282	263
1537:	280	387	417	310	264	260	364	379
1545:	304	246	200	221	185	200	215	210
1553:	208	195	202	176	190	188	176	194
1561:	184	169	177	181	206	195	203	176
1569:	210	167	189	187	205	152	180	173
1577:	187	197	179	172	177	224	468	475
1585:	252	166	152	166	201	182	162	188
1593:	206	238	321	249	166	197	256	317
1601:	197	169	154	156	172	172	199	186
1609:	166	168	160	168	150	150	162	143
1617:	138	152	138	168	146	148	146	143
1625:	136	120	115	151	147	125	116	129
1633:	127	138	124	126	127	125	121	106
1641:	119	130	123	104	96	111	111	112
1649:	121	127	104	97	116	103	115	119
1657:	105	125	108	193	470	486	262	122
1665:	97	119	94	108	82	80	110	99
1673:	78	85	103	68	91	74	78	109
1681:	81	119	127	178	136	98	95	92
1689:	92	103	112	156	164	172	111	98
1697:	98	100	81	100	92	97	64	81
1705:	85	88	78	89	65	77	82	75
1713:	82	88	96	80	77	77	59	70
1721:	79	86	74	70	81	88	94	298
1729:	925	1419	799	217	128	105	100	95
1737:	101	112	76	94	70	87	72	85
1745:	73	74	78	90	63	86	56	96
1753:	82	65	67	73	78	64	83	63
1761:	84	226	1225	4432	6158	3127	718	236
1769:	171	120	97	64	65	72	72	63
1777:	62	60	64	62	59	70	57	64
1785:	56	45	63	47	72	62	50	66
1793:	56	74	57	60	62	51	48	61
1801:	60	48	69	56	64	56	59	52
1809:	63	48	53	51	61	70	64	50
1817:	56	54	69	57	52	74	62	64
1825:	43	50	67	72	60	75	80	82
1833:	82	72	74	56	100	175	185	117
1841:	61	64	67	62	89	270	676	905
1849:	440	133	81	70	66	71	54	58
1857:	61	60	60	54	56	65	54	91
1865:	65	51	82	81	79	60	63	75

1873:	131	130	94	74	60	72	56	66
1881:	54	67	59	59	58	54	61	54
1889:	56	100	82	73	56	67	95	121
1897:	86	60	75	59	58	48	58	57
1905:	47	49	57	58	70	57	58	58
1913:	60	50	56	60	49	60	73	62
1921:	63	55	56	65	61	57	50	53
1929:	60	65	54	63	54	53	79	90
1937:	124	99	67	60	61	58	61	71
1945:	55	49	53	57	41	55	53	45
1953:	54	65	64	46	63	63	59	56
1961:	65	47	73	58	53	59	61	68
1969:	54	61	80	57	46	57	72	58
1977:	34	44	38	43	44	53	38	41
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1993:	41	42	46	41	50	49	50	36
2001:	37	35	40	34	58	36	39	31
2009:	37	47	58	43	48	52	46	46
2017:	66	55	49	43	47	36	52	41
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2041:	24	28	36	26	33	28	37	30
2049:	41	30	37	49	44	62	38	30
2057:	32	44	24	37	30	39	29	40
2065:	30	34	29	31	18	25	18	23
2073:	30	28	25	27	19	20	17	34
2081:	27	17	30	27	24	30	34	23
2089:	32	36	39	28	29	13	30	23
2097:	17	18	21	18	14	26	23	22
2105:	22	20	20	32	32	54	36	28
2113:	26	19	19	33	100	283	402	243
2121:	76	35	31	22	19	21	23	18
2129:	20	17	25	14	15	22	18	18
2137:	13	20	13	31	17	12	19	19
2145:	19	15	19	24	25	28	14	19
2153:	12	15	17	18	24	13	17	23
2161:	20	18	25	19	15	25	25	23
2169:	18	28	22	22	21	23	10	17
2177:	12	16	21	15	22	24	21	18
2185:	16	26	19	13	19	10	22	38
2193:	47	23	22	21	24	25	17	24
2201:	38	137	587	1330	1436	590	142	73
2209:	49	39	22	17	14	10	13	14
2217:	19	17	12	13	15	9	12	9
2225:	11	3	12	13	13	9	13	7
2233:	10	10	12	10	13	13	10	13
2241:	12	12	9	7	15	10	9	8
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2273:	8	10	12	12	12	3	10	6
2281:	8	8	9	9	14	16	11	11
2289:	13	7	12	37	65	74	60	18
2297:	16	10	14	12	6	5	6	6
2305:	6	4	9	4	5	6	5	14
2313:	7	7	7	6	6	3	12	7
2321:	5	4	5	8	3	9	4	7
2329:	8	5	10	10	7	3	12	5
2337:	6	2	3	7	6	4	8	5
2345:	3	3	4	6	3	4	6	6

2353:	4	2	1	6	5	3	5	2
2361:	4	2	3	2	2	2	7	3
2369:	5	3	6	2	5	5	2	4
2377:	6	1	1	7	0	8	2	5
2385:	3	6	5	2	2	4	6	2
2393:	1	3	4	0	2	4	2	4
2401:	4	2	2	1	6	6	4	8
2409:	2	1	5	0	3	4	1	1
2417:	3	1	2	1	4	5	5	6
2425:	3	7	5	2	2	7	0	2
2433:	2	3	2	3	2	3	3	6
2441:	1	6	2	4	17	69	248	420
2449:	309	123	31	10	12	3	4	5
2457:	3	5	1	3	2	3	2	4
2465:	3	3	1	3	2	3	2	2
2473:	1	0	1	1	1	1	0	4
2481:	0	1	3	3	4	3	3	3
2489:	0	2	1	4	4	1	2	1
2497:	1	1	0	2	3	0	0	1
2505:	5	3	4	0	5	0	5	1
2513:	3	1	2	0	1	1	3	4
2521:	3	2	2	1	2	2	2	0
2529:	5	1	3	3	2	0	3	0
2537:	1	0	1	0	2	1	0	0
2545:	1	1	3	0	0	1	0	1
2553:	1	0	0	0	3	1	2	1
2561:	1	1	1	0	0	1	1	0
2569:	1	1	1	2	3	2	0	0
2577:	0	4	2	1	1	0	0	2
2585:	0	3	1	0	0	1	1	1
2593:	1	0	0	2	3	1	1	2
2601:	0	0	2	1	0	2	0	1
2609:	0	0	1	4	1	5	13	6
2617:	3	1	1	0	1	1	1	1
2625:	0	2	2	1	1	0	0	1
2633:	1	0	0	0	0	0	1	2
2641:	0	0	0	1	0	2	0	1
2649:	0	1	0	0	1	1	0	2
2657:	1	1	1	0	2	0	3	0
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2673:	1	1	0	0	1	0	0	0
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2689:	0	1	2	2	1	5	5	12
2697:	2	3	1	2	1	0	1	2
2705:	2	1	0	1	0	1	0	0
2713:	0	1	1	0	0	1	0	0
2721:	1	0	1	1	0	0	0	3
2729:	1	0	1	0	0	2	0	1
2737:	1	2	0	0	0	0	1	0
2745:	0	1	0	2	2	1	1	2
2753:	3	1	0	1	2	0	0	2
2761:	0	0	0	1	0	2	3	1
2769:	5	6	4	2	2	2	1	0
2777:	1	0	0	1	0	3	1	1
2785:	3	2	3	3	2	1	0	0
2793:	1	0	0	0	0	0	0	2
2801:	0	2	2	1	0	0	0	0
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2849:	0	0	0	3	0	0	1	0
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2881:	1	1	1	0	0	1	1	0
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2913:	0	0	0	0	1	0	1	0
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2953:	0	0	1	0	0	0	0	0
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3017:	0	0	0	0	0	0	0	0
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3041:	0	0	1	0	1	0	0	1
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3057:	1	1	0	0	0	0	0	0
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3073:	0	0	0	0	0	0	1	0
3081:	2	1	0	0	0	0	0	0
3089:	1	1	0	0	0	3	0	0
3097:	0	0	0	0	1	0	0	0
3105:	0	0	0	0	0	0	0	0
3113:	1	0	0	0	0	0	0	1
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3177:	0	1	0	0	0	0	0	0
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3193:	0	0	0	0	0	1	0	0
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3209:	0	0	0	0	0	1	0	0
3217:	0	0	0	0	0	1	0	1
3225:	2	1	0	0	0	0	0	0
3233:	1	0	0	0	0	0	0	1
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3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	1	0	0
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3361:	0	1	0	0	2	0	0	0
3369:	1	0	0	0	0	0	1	0
3377:	1	0	0	0	0	0	0	0
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3513:	0	0	0	0	0	0	0	0
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3553:	0	0	0	0	0	0	0	0
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3769:	0	0	0	1	1	0	0	0
3777:	2	0	0	0	0	0	0	0
3785:	0	0	0	1	1	1	0	0

3793:	0	0	0	0	0	0	0	0
3801:	1	0	0	1	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	0	0	0	0	0	0	0	1
3825:	0	0	0	0	0	0	0	0
3833:	0	0	1	1	0	0	0	0
3841:	0	1	0	0	0	0	0	1
3849:	0	0	0	1	0	0	0	0
3857:	0	0	0	0	0	0	0	1
3865:	0	0	0	0	0	0	0	0
3873:	0	0	0	1	0	0	0	0
3881:	0	0	0	1	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	0	1
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	1	0	0	0	1
3953:	0	0	0	0	0	1	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	1	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	1	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	1	0	0	0
4009:	1	0	0	0	0	0	0	0
4017:	0	0	1	1	0	0	0	0
4025:	0	0	0	0	1	1	0	0
4033:	0	0	1	0	0	0	0	1
4041:	0	0	0	0	1	0	0	0
4049:	0	1	0	0	0	0	0	0
4057:	0	0	0	0	0	1	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	1	0	0	0	0
4081:	0	0	0	0	0	0	1	0
4089:	0	0	0	0	0	0	0	0

Sample ID : 1303013-12

Acquisition date : 1-APR-2013 16:40:06

VAX/VMS Peak Search Report Generated 1-APR-2013 17:40:43.21

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301312_GE1_GAS1202_190142.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : MQZ-64-130303
Deposition Date :
Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 16:40:06.
Sample ID : 1303013-12 Sample Quantity : 5.59620E+02 gram
Sample type : SOLID Sample Geometry : 0
Detector name : GE1 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:12.85 0.4%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	46.38*	2249	4917	1.58	46.61	44	5	10.3		PB-210
0	53.60*	593	6083	1.66	53.83	51	5	40.3		
0	63.10*	1761	8744	1.85	63.33	61	5	16.7		TH-234
0	76.17*	16626	16324	3.47	76.40	71	9	3.2		AM-243
0	86.51*	1092	7661	1.55	86.74	86	4	22.7		NP-237
										SN-126
0	93.33*	2663	7673	1.21	93.56	91	6	11.4		
0	113.38*	283	4856	2.69	113.60	112	5	74.9		
0	144.03*	283	4997	1.15	144.25	142	5	75.9		U-235
										CE-141
0	154.35	427	5854	2.08	154.58	152	6	57.6		
0	164.12*	233	5213	1.97	164.35	162	6	99.0		U-235
0	186.06*	5573	7078	1.77	186.28	182	9	6.1		RA-226
1	235.85	595	2091	1.45	236.07	233	14	23.1	2.24E+01	
1	238.94*	497	2559	1.77	239.16	233	14	32.6		PB-212
1	241.94*	5400	1980	1.45	242.16	233	14	3.6		RA-224
0	257.34	755	4272	3.65	257.56	253	10	33.2		
6	270.18	1245	3157	2.64	270.40	264	14	16.6	3.83E+00	
6	274.52	308	1955	1.70	274.73	264	14	45.7		
0	285.64	186	2266	3.83	285.86	283	6	82.2		
0	295.20*	11530	3409	1.88	295.42	291	9	2.6		PB-214
0	329.84	140	1767	1.90	330.06	328	6	96.3		
0	338.41*	151	1808	2.15	338.62	336	6	90.5		
0	351.91*	20173	2171	1.38	352.12	348	8	1.6		PB-214
0	388.02	404	1698	3.71	388.22	385	8	36.7		
2	401.75	274	1320	2.08	401.95	394	16	43.6	3.02E+00	RN-219
2	405.14	219	1348	2.08	405.35	394	16	56.0		
0	454.25	207	1225	2.22	454.46	451	8	60.2		
0	461.87	94	1055	2.24	462.08	460	7	116.8		
2	480.48	200	805	2.13	480.68	477	15	47.2	2.90E+00	
2	487.07	258	777	2.13	487.28	477	15	36.5		
0	511.01*	321	1111	2.35	511.21	507	10	41.1		
2	579.72	168	728	2.19	579.91	576	12	56.0	1.64E+00	
0	609.29*	14993	978	1.99	609.49	605	10	1.8		BI-214
0	616.16	105	456	4.04	616.35	614	6	67.7		
0	649.28	68	481	2.62	649.47	646	7	109.0		

AG
4/2/13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	665.71	388	664	1.79	665.90	662	8	25.2		
0	703.04	155	639	1.98	703.22	700	8	59.1		
0	719.67	100	437	1.25	719.85	717	6	68.9		
0	727.93	73	499	1.83	728.11	725	7	104.9		BI-212
0	742.40	80	514	2.37	742.58	740	7	96.0		
0	768.25	1451	782	2.05	768.43	763	11	9.1		
0	786.05	405	564	1.75	786.23	782	9	23.4		
3	802.01	37	121	2.10	802.19	801	10	76.4	1.38E+00	
3	806.31	394	373	1.96	806.49	801	10	18.5		
0	820.83	87	415	1.85	821.01	818	7	80.6		
0	826.06	52	319	1.05	826.24	825	5	106.3		
0	840.25	149	743	1.81	840.43	834	10	70.4		
0	934.11*	720	500	1.85	934.28	930	8	13.1		
0	964.02	94	392	2.39	964.18	961	7	72.9		
0	1001.25*	111	379	1.61	1001.42	998	7	61.3		PA-234M
0	1052.47	100	402	2.16	1052.63	1049	9	76.1		
0	1070.25	101	411	2.46	1070.41	1066	9	75.2		
0	1103.20	68	353	2.94	1103.36	1100	8	98.6		
0	1120.32*	3225	539	2.08	1120.47	1115	11	4.5		BI-214
0	1134.03	132	435	2.28	1134.18	1129	11	63.6		
0	1155.05	404	442	1.97	1155.21	1150	11	22.5		
0	1207.60	69	314	1.54	1207.75	1204	8	91.8		
0	1238.11	1281	385	2.17	1238.26	1233	11	8.1		
0	1253.62	114	310	4.38	1253.76	1249	10	61.2		
0	1281.86	295	428	1.99	1282.01	1276	11	29.6		
0	1344.29	37	182	1.78	1344.43	1342	7	125.3		
0	1370.23	50	139	2.95	1370.36	1368	6	79.3		
2	1377.72*	826	160	2.10	1377.86	1374	16	8.5	1.63E+00	
2	1385.13	176	197	2.29	1385.27	1374	16	29.8		
3	1401.53	260	183	1.87	1401.67	1395	18	20.3	4.36E-01	
3	1408.03	442	193	2.23	1408.17	1395	18	14.3		
0	1425.71	39	178	2.93	1425.84	1423	7	117.5		
0	1444.09	67	233	4.11	1444.22	1440	9	85.2		
0	1460.90*	638	376	2.40	1461.04	1456	12	14.6		K-40
0	1509.29	350	286	2.24	1509.42	1505	9	20.5		
3	1538.11	57	221	2.65	1538.24	1535	12	83.0	2.92E+00	
3	1543.28	88	219	2.29	1543.41	1535	12	60.9		
0	1583.44	131	222	2.04	1583.56	1579	10	46.1		
0	1599.49	39	105	1.45	1599.62	1598	5	86.0		
0	1661.23	189	164	2.48	1661.35	1655	13	31.6		
0	1693.37	50	88	2.00	1693.49	1690	8	70.9		
0	1729.60	594	131	2.31	1729.71	1724	13	11.4		
0	1764.42*	2538	113	2.28	1764.53	1758	14	4.3		BI-214
1	1838.47	49	57	2.99	1838.58	1835	17	56.2	2.60E+00	
1	1847.40	425	47	2.53	1847.51	1835	17	11.2		
0	1937.40	34	88	3.31	1937.50	1931	10	107.2		
0	1953.02	21	42	4.61	1953.12	1949	7	109.7		
1	2109.05	21	21	2.55	2109.14	2106	18	75.5	3.03E+00	
1	2118.14*	195	24	2.55	2118.23	2106	18	16.9		
0	2203.91	745	27	2.60	2203.99	2198	13	7.9		BI-214
0	2251.68	9	9	1.17	2251.76	2249	8	128.0		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	2293.91	40	12	3.10	2293.99	2288	10	46.1		
0	2362.93	9	5	1.75	2363.00	2359	9	113.1		
0	2447.33	190	3	2.58	2447.39	2444	9	14.8		
0	2481.38	12	2	5.67	2481.44	2476	10	77.8		
0	2614.01*	42	2	2.55	2614.06	2610	8	34.8		
0	2693.95	8	0	2.00	2694.00	2690	7	70.7		

Total number of lines in spectrum 91
Number of unidentified lines 52
Number of lines tentatively identified by NID 39 42.86%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr		Error	
K-40	1.28E+09Y	1.00	1.591E+01	1.591E+01	0.285E+01	17.92	
PB-210	22.26Y	1.00	2.755E+01	2.762E+01	0.374E+01	13.55	
BI-212	1.41E+10Y	1.00	9.404E-01	9.404E-01	9.908E-01	105.36	
PB-212	1.41E+10Y	1.00	7.273E-01	7.273E-01	2.875E-01	39.53	
BI-214	1602.00Y	1.00	4.661E+01	4.661E+01	0.262E+01	5.62	
PB-214	1602.00Y	1.00	4.586E+01	4.586E+01	0.752E+01	16.40	
RN-219	3.28E+04Y	1.00	3.973E+00	3.973E+00	1.791E+00	45.07	
RA-224	1.41E+10Y	1.00	8.969E+01	8.969E+01	2.075E+01	23.14	
RA-226	1602.00Y	1.00	9.622E+01	9.622E+01	17.66E+01	183.48	
PA-234M	4.47E+09Y	1.00	2.407E+01	2.407E+01	1.492E+01	62.00	
TH-234	4.47E+09Y	1.00	2.157E+01	2.157E+01	0.403E+01	18.68	
U-235	7.04E+08Y	1.00	2.637E+00	2.637E+00	2.662E+00	100.96	
Total Activity :			3.757E+02	3.758E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr		Error	
SN-126	1.00E+05Y	1.00	1.337E+00	1.337E+00	0.333E+00	24.92	
CE-141	32.50D	1.88	2.966E-01	5.590E-01	4.468E-01	79.93	
NP-237	2.14E+06Y	1.00	3.923E+00	3.923E+00	0.976E+00	24.88	
Total Activity :			5.556E+00	5.819E+00			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr		Error	
AM-243	7380.00Y	1.00	1.144E+01	1.144E+01	0.112E+01	9.78	
Total Activity :			1.144E+01	1.144E+01			

Grand Total Activity : 3.927E+02 3.931E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma	Status
				pCi/gram	pCi/gram	%Error	
K-40	1460.81	10.67*	5.045E-01	1.591E+01	1.591E+01	17.92	OK
Final Mean for 1 Valid Peaks = 1.591E+01+/- 2.851E+00 (17.92%)							
PB-210	46.50	4.25*	2.577E+00	2.755E+01	2.762E+01	13.55	OK
Final Mean for 1 Valid Peaks = 2.762E+01+/- 3.743E+00 (13.55%)							
BI-212	727.17	11.80*	8.782E-01	9.404E-01	9.404E-01	105.36	OK
	1620.62	2.75	4.685E-01	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 9.404E-01+/- 9.908E-01 (105.36%)							
PB-212	238.63	44.60*	2.057E+00	7.273E-01	7.273E-01	39.53	OK
	300.09	3.41	1.767E+00	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 7.273E-01+/- 2.875E-01 (39.53%)							
BI-214	609.31	46.30*	1.017E+00	4.271E+01	4.271E+01	10.84	OK
	1120.29	15.10	6.174E-01	4.640E+01	4.640E+01	10.32	OK
	1764.49	15.80	4.419E-01	4.877E+01	4.877E+01	10.95	OK
	2204.22	4.98	3.841E-01	5.228E+01	5.228E+01	13.46	OK
Final Mean for 4 Valid Peaks = 4.661E+01+/- 2.621E+00 (5.62%)							
PB-214	295.21	19.19	1.787E+00	4.509E+01	4.510E+01	29.35	OK
	351.92	37.19*	1.574E+00	4.622E+01	4.622E+01	19.77	OK
Final Mean for 2 Valid Peaks = 4.586E+01+/- 7.521E+00 (16.40%)							
RN-219	401.80	6.50*	1.423E+00	3.973E+00	3.973E+00	45.07	OK
Final Mean for 1 Valid Peaks = 3.973E+00+/- 1.791E+00 (45.07%)							
RA-224	240.98	3.95*	2.045E+00	8.969E+01	8.969E+01	23.14	OK
Final Mean for 1 Valid Peaks = 8.969E+01+/- 2.075E+01 (23.14%)							
RA-226	186.21	3.28*	2.369E+00	9.622E+01	9.622E+01	183.48	OK
Final Mean for 1 Valid Peaks = 9.622E+01+/- 1.766E+02 (183.48%)							
PA-234M	1001.03	0.92*	6.754E-01	2.407E+01	2.407E+01	62.00	OK
Final Mean for 1 Valid Peaks = 2.407E+01+/- 1.492E+01 (62.00%)							
TH-234	63.29	3.80*	2.882E+00	2.157E+01	2.157E+01	18.68	OK
Final Mean for 1 Valid Peaks = 2.157E+01+/- 4.028E+00 (18.68%)							

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/gram	pCi/gram	%Error	
U-235	143.76	10.50*	2.659E+00	1.361E+00	1.361E+00	78.14	<WM Interf
	163.35	4.70	2.523E+00	2.637E+00	2.637E+00	100.96	OK
	205.31	4.70	2.248E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 2.637E+00+/- 2.662E+00 (100.96%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/gram	pCi/gram	%Error	
SN-126	87.57	37.00*	2.963E+00	1.337E+00	1.337E+00	24.92	OK

Final Mean for 1 Valid Peaks = 1.337E+00+/- 3.330E-01 (24.92%)

CE-141	145.44	48.40*	2.648E+00	2.966E-01	5.590E-01	79.93	OK
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Final Mean for 1 Valid Peaks = 5.590E-01+/- 4.468E-01 (79.93%)

NP-237	86.50	12.60*	2.964E+00	3.923E+00	3.923E+00	24.88	OK
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Final Mean for 1 Valid Peaks = 3.923E+00+/- 9.759E-01 (24.88%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/gram	pCi/gram	%Error	
AM-243	74.67	66.00*	2.955E+00	1.144E+01	1.144E+01	9.78	OK

Final Mean for 1 Valid Peaks = 1.144E+01+/- 1.118E+00 (9.78%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	1.591E+01	2.851E+00	1.744E+00	1.686E-01	9.120
SN-126	1.337E+00	3.330E-01	5.304E-01	5.066E-02	2.520
CE-141	5.590E-01	4.468E-01	6.358E-01	1.581E-01	0.879
PB-210	2.762E+01	3.743E+00	4.075E+00	3.214E-01	6.778
BI-212	9.404E-01	9.908E-01	1.282E+00	1.188E-01	0.734
PB-212	7.273E-01	2.875E-01	3.413E-01	7.517E-02	2.131
BI-214	4.661E+01	2.621E+00	3.183E-01	3.153E-02	146.428
PB-214	4.586E+01	7.521E+00	3.969E-01	7.659E-02	115.534
RN-219	3.973E+00	1.791E+00	2.378E+00	2.529E-01	1.671
RA-224	8.969E+01	2.075E+01	3.880E+00	8.734E-01	23.118
RA-226	9.622E+01	1.766E+02	4.907E+00	8.996E+00	19.611
PA-234M	2.407E+01	1.492E+01	1.924E+01	1.665E+00	1.251
TH-234	2.157E+01	4.028E+00	5.005E+00	3.716E-01	4.309
U-235	2.637E+00	2.662E+00	1.520E+00	2.784E-01	1.735
NP-237	3.923E+00	9.759E-01	1.611E+00	1.521E-01	2.436
AM-243	1.144E+01	1.118E+00	2.892E-01	2.411E-02	39.544

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	9.979E-01		1.301E+00	2.068E+00	2.213E-01	0.483
NA-22	3.513E-02		1.192E-01	1.831E-01	1.636E-02	0.192
AL-26	-1.029E-03		6.306E-02	1.089E-01	9.954E-03	-0.009
TI-44	2.183E-01		1.537E-01	2.046E-01	1.590E-02	1.067
SC-46	1.178E-02		1.315E-01	2.247E-01	1.967E-02	0.052
V-48	-5.041E-03		3.655E-01	6.215E-01	5.391E-02	-0.008
CR-51	-3.019E+00		2.152E+00	3.060E+00	7.733E-01	-0.987
MN-54	-5.995E-02		1.344E-01	1.833E-01	1.652E-02	-0.327
CO-56	-8.033E-02		1.462E-01	2.178E-01	1.952E-02	-0.369
CO-57	3.743E-02		1.153E-01	1.859E-01	2.066E-02	0.201
CO-58	-2.315E-02		1.370E-01	2.087E-01	1.903E-02	-0.111
FE-59	7.000E-02		3.277E-01	5.023E-01	4.602E-02	0.139
CO-60	3.814E-02		1.030E-01	1.778E-01	1.457E-02	0.215
ZN-65	4.363E-01		2.635E-01	4.272E-01	3.592E-02	1.021
SE-75	-8.811E-02		2.306E-01	2.878E-01	7.977E-02	-0.306
RB-82	-1.550E+00		2.195E+00	2.535E+00	2.330E-01	-0.611
RB-83	1.217E-01		2.468E-01	3.892E-01	6.535E-02	0.313
KR-85	2.164E+01		2.130E+01	3.401E+01	3.605E+00	0.636
SR-85	1.293E-01		1.272E-01	2.032E-01	2.154E-02	0.636
Y-88	1.476E-01		1.102E-01	1.882E-01	1.709E-02	0.784
NB-93M	-2.260E+01		5.714E+00	1.082E+00	2.619E-01	-20.876
NB-94	-3.068E-02		9.960E-02	1.681E-01	1.487E-02	-0.183
NB-95	2.633E+00		3.536E-01	4.898E-01	4.516E-02	5.376
ZR-95	-5.585E-02		2.382E-01	3.864E-01	3.884E-02	-0.145
RU-103	1.617E-01		1.552E-01	2.716E-01	4.206E-02	0.596
RU-106	1.266E-01		9.041E-01	1.412E+00	1.995E-01	0.090
AG-108M	-3.663E-02		1.426E-01	1.714E-01	1.589E-02	-0.214

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
CD-109	1.799E+01		4.391E+00	5.953E+00	6.711E-01	3.023
AG-110M	6.175E-02		1.141E-01	1.659E-01	1.546E-02	0.372
SN-113	1.680E-01		2.161E-01	2.779E-01	3.005E-02	0.604
TE123M	7.360E-03		1.762E-01	2.272E-01	2.151E-02	0.032
SB-124	-3.667E-02		1.360E-01	2.086E-01	2.081E-02	-0.176
I-125	-3.722E+00		2.164E+00	3.422E+00	3.216E-01	-1.088
SB-125	-6.488E-02		3.199E-01	5.517E-01	5.979E-02	-0.118
SB-126	1.481E+00	+	1.032E+00	1.639E+00	1.520E-01	0.904
SB-127	2.257E+01		4.959E+01	8.647E+01	8.024E+00	0.261
I-129	-1.178E-01		1.928E-01	3.145E-01	3.453E-02	-0.375
I-131	1.022E+00		1.311E+00	2.292E+00	3.833E-01	0.446
BA-133	1.799E-01		1.550E-01	2.425E-01	5.094E-02	0.742
CS-134	1.045E-01		1.033E-01	1.647E-01	1.642E-02	0.635
CS-135	3.472E+00		1.205E+00	1.077E+00	3.071E-01	3.224
CS-136	2.270E-01		7.102E-01	1.095E+00	9.671E-02	0.207
CS-137	3.880E-02		1.104E-01	1.733E-01	1.608E-02	0.224
LA-138	1.174E-01		1.765E-01	2.768E-01	2.611E-02	0.424
CE-139	1.981E-01		1.569E-01	2.332E-01	2.129E-02	0.849
BA-140	-1.470E+00		1.793E+00	2.912E+00	9.807E-01	-0.505
LA-140	3.922E-01		6.649E-01	1.032E+00	9.706E-02	0.380
CE-144	1.007E-01		9.386E-01	1.507E+00	1.600E-01	0.067
PM-144	-4.878E-02		1.014E-01	1.532E-01	1.423E-02	-0.318
PM-145	-1.727E-01		4.558E-01	7.222E-01	4.706E-01	-0.239
PM-146	5.443E-01	+	3.337E-01	3.969E-01	4.256E-02	1.371
ND-147	7.383E-01		4.204E+00	7.294E+00	7.674E-01	0.101
EU-152	7.682E+00	+	1.444E+00	2.052E+00	2.372E-01	3.743
GD-153	-3.992E-01		4.334E-01	6.882E-01	7.005E-02	-0.580
EU-154	7.511E-02		3.317E-01	5.075E-01	4.534E-02	0.148
EU-155	1.618E+00	+	4.025E-01	6.761E-01	6.385E-02	2.393
EU-156	2.805E-01		4.122E+00	5.808E+00	1.337E+00	0.048
HO-166M	2.055E-02		2.289E-01	2.821E-01	2.617E-02	0.073
HF-172	-4.060E-01		8.453E-01	1.348E+00	1.475E-01	-0.301
LU-172	9.999E-02		3.712E+00	6.013E+00	5.089E-01	0.017
LU-173	3.245E+00		1.105E+00	8.769E-01	2.581E-01	3.700
HF-175	-1.027E-01		1.989E-01	2.442E-01	5.117E-02	-0.420
LU-176	-5.369E-02		1.004E-01	1.548E-01	4.217E-02	-0.347
TA-182	2.405E+01	+	2.482E+00	2.075E+00	1.740E-01	11.590
IR-192	1.748E-01		2.506E-01	3.978E-01	4.263E-02	0.439
HG-203	7.245E-02		2.343E-01	2.984E-01	9.307E-02	0.243
BI-207	1.737E-02		8.810E-02	1.462E-01	1.502E-02	0.119
TL-208	5.287E-01		3.023E-01	5.345E-01	5.430E-02	0.989
BI-210M	2.498E-02		2.561E-01	3.261E-01	8.836E-02	0.077
PB-211	7.154E+00	+	4.086E+00	5.873E+00	6.252E-01	1.218
RA-223	2.220E+00		2.470E+00	3.860E+00	9.448E-01	0.575
RA-225	-3.678E-01		1.315E+00	1.986E+00	1.711E-01	-0.185
TH-227	3.350E+00	+	1.064E+00	1.504E+00	3.232E-01	2.227
AC-228	3.256E-01		4.153E-01	7.209E-01	6.277E-02	0.452
TH-230	5.874E+01		3.924E+01	5.226E+01	4.053E+00	1.124

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
PA-231	7.189E+00		4.827E+00	6.597E+00	1.839E+00	1.090
TH-231	3.730E-01		8.578E-01	1.423E+00	1.835E-01	0.262
PA-233	2.957E-01		5.272E-01	8.245E-01	2.770E-01	0.359
PA-234	1.047E-01		4.591E-01	7.384E-01	7.913E-02	0.142
AM-241	1.078E+00		3.400E-01	5.114E-01	3.662E-02	2.109
CM-243	1.428E-01		7.379E-01	1.073E+00	3.299E-01	0.133

Total number of lines in spectrum 91
Number of unidentified lines 52
Number of lines tentatively identified by NID 39 42.86%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
K-40	1.28E+09Y	1.00	1.591E+01	1.591E+01	0.285E+01	17.92	
PB-210	22.26Y	1.00	2.755E+01	2.762E+01	0.374E+01	13.55	
BI-212	1.41E+10Y	1.00	9.404E-01	9.404E-01	9.908E-01	105.36	
PB-212	1.41E+10Y	1.00	7.273E-01	7.273E-01	2.875E-01	39.53	
BI-214	1602.00Y	1.00	4.661E+01	4.661E+01	0.262E+01	5.62	
PB-214	1602.00Y	1.00	4.586E+01	4.586E+01	0.752E+01	16.40	
RN-219	3.28E+04Y	1.00	3.973E+00	3.973E+00	1.791E+00	45.07	
RA-224	1.41E+10Y	1.00	8.969E+01	8.969E+01	2.075E+01	23.14	
RA-226	1602.00Y	1.00	9.622E+01	9.622E+01	17.66E+01	183.48	
PA-234M	4.47E+09Y	1.00	2.407E+01	2.407E+01	1.492E+01	62.00	
TH-234	4.47E+09Y	1.00	2.157E+01	2.157E+01	0.403E+01	18.68	
U-235	7.04E+08Y	1.00	2.637E+00	2.637E+00	2.662E+00	100.96	
Total Activity :			3.757E+02	3.758E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
SN-126	1.00E+05Y	1.00	1.337E+00	1.337E+00	0.333E+00	24.92	
CE-141	32.50D	1.88	2.966E-01	5.590E-01	4.468E-01	79.93	
NP-237	2.14E+06Y	1.00	3.923E+00	3.923E+00	0.976E+00	24.88	
Total Activity :			5.556E+00	5.819E+00			

Nuclide Type : ACTIVATION

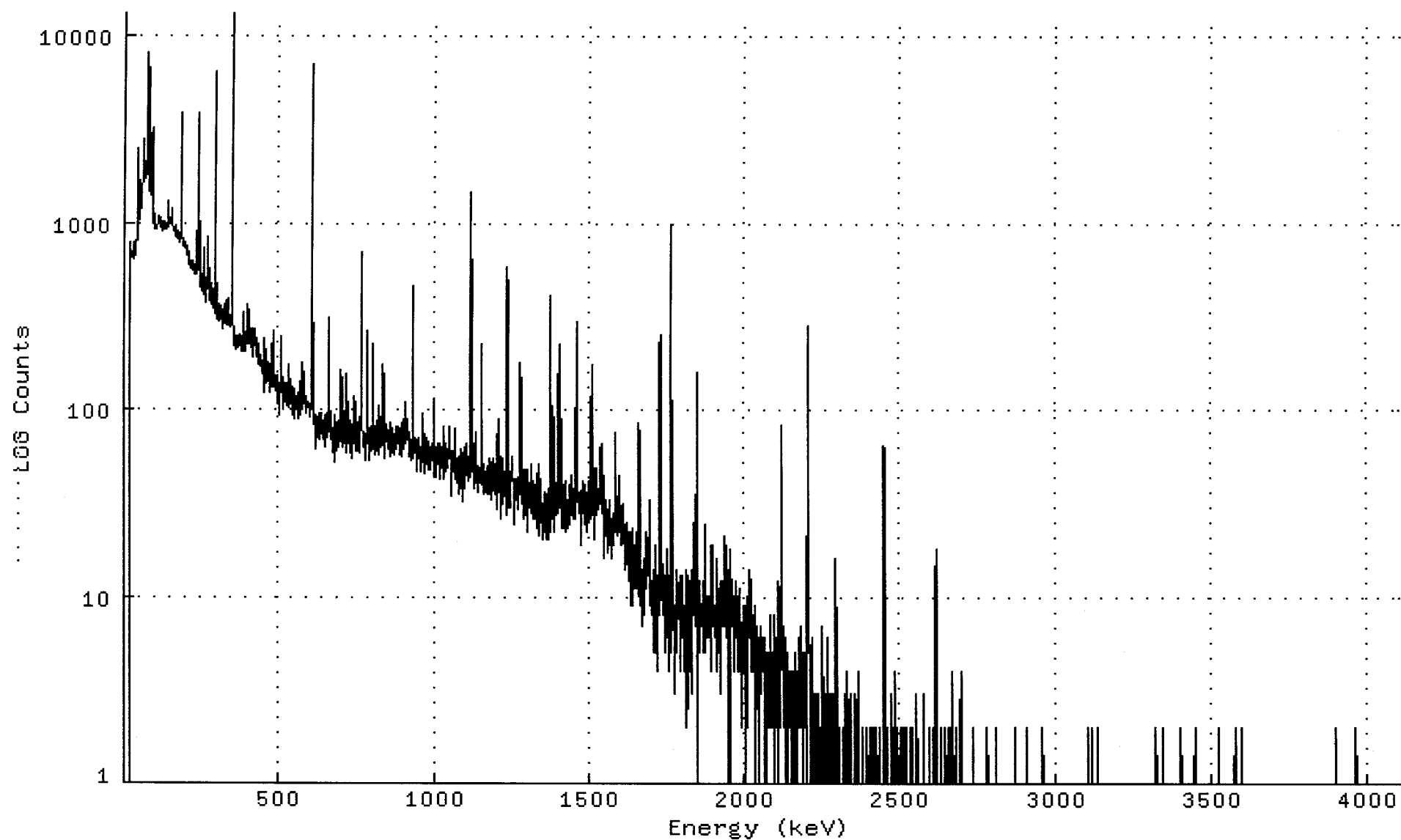
Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
AM-243	7380.00Y	1.00	1.144E+01	1.144E+01	0.112E+01	9.78	
Total Activity :			1.144E+01	1.144E+01			

Grand Total Activity : 3.927E+02 3.931E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301312_GE1_GAS1202_190142.CNF;1
Title :
Sample Title: MQZ-64-130303
Start Time: 1-APR-2013 16:40: Sample Time: 3-MAR-2013 00:00: Energy Offset: -2.35223E-01
Real Time : 0 01:00:12.85 Sample ID : 1303013-12 Energy Slope : 1.00007E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301312_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	536	770	719	643	641	641
25:	639	682	681	694	648	658	625	786
33:	741	667	658	732	749	707	787	764
41:	807	811	907	928	993	1793	2471	1036
49:	1037	1335	1111	1196	1670	1520	1185	1239
57:	1322	1389	1503	1680	1735	1808	2743	2612
65:	1724	1832	1809	2090	1826	1715	1794	1802
73:	1959	2475	6275	3251	8098	5490	1824	1935
81:	1942	1619	1465	2717	1641	1370	2983	2953
89:	1453	2087	1489	1745	3176	1599	1450	1028
97:	909	1109	1104	972	920	975	917	956
105:	940	949	935	928	969	1004	969	1024
113:	1080	1073	1015	957	953	930	927	952
121:	938	977	1006	898	956	936	970	935
129:	930	935	922	1013	940	926	911	944
137:	972	933	946	941	1010	978	971	1296
145:	1087	968	1038	979	1037	1012	1047	979
153:	1050	1153	1166	974	959	940	925	899
161:	897	893	937	965	898	890	868	833
169:	827	839	818	899	823	811	808	824
177:	775	822	878	787	812	793	848	864
185:	1149	3862	2799	820	806	774	772	748
193:	787	783	781	731	746	768	725	767
201:	725	727	679	687	654	725	645	648
209:	659	689	586	616	610	608	588	596
217:	556	568	581	544	568	603	576	545
225:	612	564	551	551	533	530	550	544
233:	521	525	619	901	650	603	763	551
241:	855	3835	1987	514	463	444	500	447
249:	460	455	444	423	454	445	463	591
257:	593	461	726	463	407	424	412	386
265:	402	415	373	396	637	835	677	596
273:	435	477	556	428	387	391	378	384
281:	385	403	361	463	390	410	439	389
289:	360	396	345	384	379	672	6381	5577
297:	573	338	303	470	405	302	382	326
305:	365	331	309	307	297	318	314	326
313:	322	355	302	310	337	301	282	287
321:	311	266	324	360	298	316	308	288
329:	316	381	357	287	278	306	323	289
337:	319	367	385	326	279	317	314	288
345:	272	306	308	297	339	378	2479	13334
353:	4968	326	238	241	240	229	223	224
361:	207	232	243	233	246	224	245	220
369:	225	239	232	211	248	246	218	223
377:	219	226	220	208	242	227	243	204
385:	202	253	324	269	328	265	235	226
393:	213	205	221	259	252	224	224	221
401:	256	363	272	254	336	275	269	257
409:	222	240	215	267	256	242	237	219
417:	239	241	191	269	239	268	231	218
425:	239	238	226	238	211	197	191	213

433:	192	225	181	177	192	174	188	183
441:	177	168	190	195	179	169	182	178
449:	154	166	159	169	175	215	238	184
457:	169	123	169	136	180	206	184	157
465:	140	146	153	148	157	178	159	123
473:	156	150	174	141	132	157	145	196
481:	225	183	135	132	154	132	261	200
489:	155	148	126	127	132	143	142	147
497:	122	128	151	134	107	137	93	111
505:	133	123	110	131	142	205	247	177
513:	151	146	117	99	115	128	123	118
521:	137	110	122	109	115	123	116	114
529:	136	104	124	115	142	173	147	122
537:	130	101	136	107	119	115	145	110
545:	110	110	131	116	93	98	129	89
553:	108	124	109	105	102	118	100	113
561:	110	118	110	89	104	121	121	98
569:	113	92	111	111	142	96	105	101
577:	99	126	124	179	146	112	157	136
585:	119	112	107	104	98	94	104	116
593:	110	103	102	102	110	101	110	105
601:	100	107	97	90	100	99	106	818
609:	6909	6877	795	106	83	92	108	98
617:	99	90	74	63	88	72	61	92
625:	89	70	88	76	72	78	83	68
633:	95	77	84	76	76	80	95	74
641:	90	78	73	73	69	70	70	81
649:	92	88	75	73	63	74	71	81
657:	70	81	95	80	91	86	76	79
665:	220	307	132	72	80	77	68	87
673:	68	69	72	73	71	79	59	77
681:	75	86	83	93	52	85	84	84
689:	60	71	82	86	72	81	62	65
697:	85	67	91	81	82	101	162	138
705:	88	80	62	89	76	87	75	70
713:	97	80	65	70	59	72	93	155
721:	86	72	87	83	66	78	108	97
729:	70	82	71	67	58	86	68	55
737:	59	82	77	64	79	100	117	99
745:	66	69	82	72	76	79	60	82
753:	109	60	71	79	75	85	68	73
761:	74	59	80	64	75	110	185	621
769:	697	174	83	69	75	70	64	63
777:	68	66	53	73	72	66	67	73
785:	141	263	155	76	66	62	53	79
793:	70	73	78	77	81	69	74	60
801:	60	79	61	73	103	218	221	104
809:	57	59	68	64	58	81	74	65
817:	62	60	67	75	100	80	63	57
825:	59	104	68	78	62	73	81	91
833:	92	72	75	64	67	92	172	139
841:	64	66	81	54	65	74	72	80
849:	67	83	78	72	77	61	68	70
857:	65	56	64	67	77	85	76	61
865:	79	72	58	73	69	74	66	62
873:	73	57	69	64	81	75	61	67
881:	72	79	68	72	69	65	81	65
889:	74	73	65	69	57	74	85	56
897:	78	81	81	76	77	75	61	75
905:	88	83	75	66	84	81	110	103

913:	75	79	68	86	75	79	57	75
921:	63	59	71	56	62	53	62	69
929:	60	69	55	58	145	452	315	74
937:	54	67	71	58	61	60	67	68
945:	55	64	59	46	54	56	55	59
953:	59	56	70	46	60	60	62	53
961:	54	56	71	95	90	68	52	64
969:	73	65	45	65	57	57	62	54
977:	53	70	54	51	62	47	52	51
985:	57	67	60	55	47	59	58	48
993:	61	66	53	66	61	58	52	72
1001:	115	81	73	43	57	48	63	43
1009:	56	50	54	51	53	56	65	61
1017:	65	55	55	61	42	57	65	54
1025:	63	54	49	49	52	62	48	42
1033:	81	55	55	51	46	57	54	46
1041:	65	57	48	48	53	49	60	61
1049:	54	55	63	81	81	45	47	42
1057:	34	38	41	58	46	60	55	52
1065:	46	52	54	42	63	79	73	50
1073:	53	46	40	53	55	48	42	46
1081:	56	52	35	39	44	54	55	38
1089:	50	61	32	46	58	50	46	43
1097:	62	49	38	48	49	55	54	65
1105:	52	52	46	44	45	47	44	41
1113:	56	49	45	43	53	65	306	1454
1121:	1335	310	53	48	55	47	51	40
1129:	38	45	55	45	57	76	63	47
1137:	46	53	42	38	50	47	37	36
1145:	48	50	44	45	43	40	47	49
1153:	50	93	221	157	64	39	51	35
1161:	43	42	39	38	38	46	39	36
1169:	39	39	42	41	42	50	35	48
1177:	44	35	43	43	47	54	49	52
1185:	34	48	33	45	54	39	43	48
1193:	37	47	45	37	48	39	35	38
1201:	51	29	33	40	31	35	62	89
1209:	49	40	37	46	37	34	29	56
1217:	26	31	44	52	42	55	31	37
1225:	45	46	38	41	40	40	42	27
1233:	44	39	42	57	237	574	426	118
1241:	50	40	39	30	30	43	46	40
1249:	31	46	42	41	56	54	44	48
1257:	38	24	31	41	38	41	37	42
1265:	34	41	40	35	29	30	33	36
1273:	31	36	52	40	35	37	40	80
1281:	177	124	65	37	57	31	34	38
1289:	40	26	47	40	34	27	42	32
1297:	41	47	39	37	22	33	30	47
1305:	38	37	37	35	30	35	36	46
1313:	29	38	28	51	47	36	34	33
1321:	32	38	29	26	36	31	33	39
1329:	31	26	36	34	29	23	23	40
1337:	51	38	41	39	21	31	26	42
1345:	39	25	27	29	23	25	28	31
1353:	29	20	23	34	31	24	36	26
1361:	32	35	34	31	21	31	20	20
1369:	38	36	36	30	29	22	36	57
1377:	253	405	190	38	28	27	26	45
1385:	104	81	44	28	22	35	28	32

1393:	40	33	32	27	36	33	28	43
1401:	118	155	61	30	30	43	107	223
1409:	145	55	31	23	29	32	33	32
1417:	23	39	32	29	23	26	22	25
1425:	40	41	40	26	23	30	24	33
1433:	33	30	34	33	30	39	25	24
1441:	32	27	40	42	34	44	31	26
1449:	28	32	34	32	44	33	26	39
1457:	29	29	51	207	296	180	55	41
1465:	32	36	28	33	28	32	34	30
1473:	19	27	33	37	33	41	29	30
1481:	35	32	30	25	32	39	35	24
1489:	32	29	34	22	35	36	27	25
1497:	33	27	31	36	35	41	27	35
1505:	26	29	36	80	174	169	54	37
1513:	31	35	20	48	39	42	26	31
1521:	49	33	27	39	33	34	33	35
1529:	34	33	29	38	31	45	35	39
1537:	31	63	57	36	35	42	65	64
1545:	28	31	26	34	44	16	26	26
1553:	24	21	29	23	33	26	25	21
1561:	20	17	27	22	28	26	19	33
1569:	22	16	26	25	18	23	17	20
1577:	28	22	23	27	23	32	75	65
1585:	32	24	30	22	22	33	21	34
1593:	28	27	44	33	22	22	42	31
1601:	30	19	22	22	19	19	21	31
1609:	25	22	24	26	14	19	19	16
1617:	24	19	15	23	25	19	15	16
1625:	17	22	18	12	17	13	12	16
1633:	9	11	22	14	19	9	20	23
1641:	14	14	17	19	17	16	11	17
1649:	16	17	13	12	22	18	11	12
1657:	19	21	10	49	85	70	28	13
1665:	10	16	9	13	9	7	9	14
1673:	12	16	10	13	10	8	11	13
1681:	16	13	13	22	11	14	18	13
1689:	13	13	16	13	33	24	19	10
1697:	10	9	12	12	9	9	10	8
1705:	14	13	13	7	14	5	9	7
1713:	15	19	5	14	12	11	4	12
1721:	4	8	11	8	11	8	13	54
1729:	209	251	109	20	10	13	10	9
1737:	12	11	15	13	8	10	13	5
1745:	9	11	8	9	10	18	9	6
1753:	14	6	13	4	8	6	12	5
1761:	16	32	265	958	975	303	42	11
1769:	7	11	11	7	6	8	3	5
1777:	9	8	9	14	6	5	7	13
1785:	11	8	9	11	8	11	5	13
1793:	11	10	4	8	9	8	7	13
1801:	6	7	9	5	6	7	9	4
1809:	9	8	7	7	7	14	2	3
1817:	13	4	8	9	8	9	6	12
1825:	9	12	5	3	8	6	11	12
1833:	14	8	9	8	16	25	25	14
1841:	10	7	14	9	23	54	146	159
1849:	60	13	1	8	7	5	7	9
1857:	9	12	7	8	7	7	8	7
1865:	9	12	5	9	9	5	8	13

1873:	24	14	5	8	7	10	6	10
1881:	6	6	7	10	7	10	6	9
1889:	8	10	9	12	4	6	19	17
1897:	19	10	8	10	7	8	8	9
1905:	8	7	9	4	9	7	10	12
1913:	16	5	11	9	8	7	7	8
1921:	3	5	7	8	12	7	12	10
1929:	7	8	9	7	9	9	13	21
1937:	17	19	12	6	12	10	9	11
1945:	13	9	11	7	1	14	14	8
1953:	7	18	1	14	11	8	7	9
1961:	8	10	5	7	9	4	10	10
1969:	7	8	12	12	6	6	6	4
1977:	10	9	7	7	4	9	4	11
1985:	9	6	8	4	2	3	3	6
1993:	6	9	6	9	6	4	4	6
2001:	6	9	1	4	7	2	5	6
2009:	7	9	10	9	6	8	7	7
2017:	14	11	11	8	7	8	4	7
2025:	4	8	5	5	8	5	3	4
2033:	9	1	6	2	3	6	7	5
2041:	5	3	3	5	1	6	6	2
2049:	6	3	5	4	7	6	5	5
2057:	4	6	5	5	6	5	3	4
2065:	1	4	4	4	1	1	1	5
2073:	3	2	4	3	4	5	5	5
2081:	2	5	5	5	8	3	3	2
2089:	4	5	4	0	4	8	7	2
2097:	8	3	2	2	6	2	4	4
2105:	6	1	4	6	12	7	5	2
2113:	3	6	8	5	26	83	63	23
2121:	7	8	2	3	7	4	3	2
2129:	2	1	2	6	3	2	2	1
2137:	5	1	2	2	3	3	2	2
2145:	2	4	1	3	1	3	4	4
2153:	1	1	2	4	1	2	3	4
2161:	1	5	2	4	3	4	2	1
2169:	4	2	3	2	6	3	2	3
2177:	2	4	3	4	2	4	7	3
2185:	3	3	3	0	5	3	3	5
2193:	5	2	3	2	2	1	3	2
2201:	10	45	199	280	168	48	5	6
2209:	5	0	5	2	3	1	6	3
2217:	2	2	2	1	3	3	3	1
2225:	0	2	3	2	0	3	2	2
2233:	1	1	1	3	2	0	1	1
2241:	2	2	0	1	0	2	4	0
2249:	0	1	7	2	2	3	1	2
2257:	2	3	3	2	3	3	1	1
2265:	1	1	2	6	1	0	2	2
2273:	1	2	3	1	2	1	2	3
2281:	2	2	0	1	0	2	3	2
2289:	1	0	2	12	16	11	7	1
2297:	0	0	2	1	2	2	0	2
2305:	1	0	1	1	1	0	1	1
2313:	0	0	0	2	1	2	0	2
2321:	0	2	3	1	0	1	0	0
2329:	3	4	2	1	2	2	1	1
2337:	1	3	0	1	2	0	0	0
2345:	1	0	0	1	1	1	2	1

2353:	2	2	3	1	0	1	0	1
2361:	2	4	2	2	1	1	0	1
2369:	0	1	0	0	1	0	2	2
2377:	1	1	1	1	0	0	1	0
2385:	0	1	0	1	1	1	0	2
2393:	0	0	1	0	1	0	2	0
2401:	0	1	0	0	0	1	1	0
2409:	1	2	0	2	1	0	0	2
2417:	0	1	1	1	1	0	2	0
2425:	1	1	1	0	1	1	0	2
2433:	1	2	0	0	1	1	0	0
2441:	1	0	0	0	9	29	64	63
2449:	23	4	1	0	1	1	1	1
2457:	2	0	1	0	0	1	1	0
2465:	0	0	3	0	0	0	2	0
2473:	0	0	1	0	0	1	4	1
2481:	3	2	1	2	0	0	2	1
2489:	0	0	0	0	0	0	0	0
2497:	2	0	0	1	1	0	1	2
2505:	0	1	1	0	1	1	0	0
2513:	0	2	0	0	2	0	2	0
2521:	1	0	0	1	0	0	0	0
2529:	0	0	0	2	0	0	0	1
2537:	0	2	0	0	0	0	1	1
2545:	0	0	0	1	1	1	3	0
2553:	0	1	0	0	1	1	0	1
2561:	0	0	0	0	0	0	0	1
2569:	0	1	0	1	3	0	0	1
2577:	0	1	0	0	1	0	0	0
2585:	0	0	0	0	0	1	0	1
2593:	2	0	1	0	0	0	0	0
2601:	1	0	2	1	1	1	0	0
2609:	0	0	0	4	12	18	10	6
2617:	0	1	0	0	0	1	0	0
2625:	0	0	1	0	2	0	0	0
2633:	0	1	0	0	0	0	1	0
2641:	0	0	1	2	0	0	0	0
2649:	0	1	0	0	0	0	2	0
2657:	0	0	1	1	0	0	4	0
2665:	0	2	0	0	1	0	0	1
2673:	0	1	2	0	0	1	0	0
2681:	0	0	0	1	0	1	0	0
2689:	0	0	0	0	2	4	2	0
2697:	0	1	0	0	0	1	0	0
2705:	1	1	0	1	0	0	0	0
2713:	1	0	0	1	0	0	0	0
2721:	0	0	0	1	1	1	0	0
2729:	1	0	1	1	0	2	0	0
2737:	1	0	1	0	0	0	0	0
2745:	0	0	1	1	1	0	0	1
2753:	0	0	0	1	0	1	0	0
2761:	0	0	1	0	0	0	0	0
2769:	1	1	1	0	0	0	1	1
2777:	0	1	2	0	0	0	0	1
2785:	0	0	1	0	1	0	0	0
2793:	0	0	1	0	0	1	0	1
2801:	0	1	1	0	0	2	0	0
2809:	1	0	0	0	0	0	0	0
2817:	1	0	0	1	0	0	0	0
2825:	0	1	0	0	1	0	0	1

2833:	0	0	1	1	0	1	0	0
2841:	0	0	0	0	0	0	0	0
2849:	0	1	0	0	1	0	0	0
2857:	1	0	0	1	0	0	0	0
2865:	0	0	0	2	0	1	1	0
2873:	0	0	0	0	1	1	0	0
2881:	0	0	0	0	0	1	0	0
2889:	0	0	0	1	1	1	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	2	1	1	0	0	0	0
2913:	0	0	0	1	1	0	0	1
2921:	1	0	0	0	0	0	0	0
2929:	1	0	0	0	0	0	1	0
2937:	0	1	0	0	0	0	0	0
2945:	0	0	0	1	0	0	0	0
2953:	0	0	0	1	2	0	0	0
2961:	0	0	0	0	0	0	0	0
2969:	0	1	0	0	0	0	0	0
2977:	0	0	1	0	0	0	0	0
2985:	1	0	1	0	0	0	1	1
2993:	0	0	0	0	0	1	1	0
3001:	0	1	1	0	0	0	0	1
3009:	0	0	0	0	0	0	0	0
3017:	0	0	1	1	0	0	0	0
3025:	0	0	1	0	0	0	0	0
3033:	0	0	0	0	0	0	0	1
3041:	1	0	1	0	0	0	0	0
3049:	0	0	0	0	1	0	0	1
3057:	0	0	0	0	0	0	0	0
3065:	0	0	0	0	0	0	1	1
3073:	0	0	0	0	0	1	1	1
3081:	1	0	0	0	0	0	0	0
3089:	0	1	0	1	0	1	0	0
3097:	1	1	0	0	0	0	2	0
3105:	0	0	0	0	0	0	0	2
3113:	0	0	1	0	1	0	0	1
3121:	0	0	0	0	0	1	1	0
3129:	0	0	2	0	1	0	0	0
3137:	0	0	0	0	0	0	1	0
3145:	0	0	0	0	0	0	0	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	0	0	0	0	1
3169:	1	0	0	0	0	0	0	1
3177:	1	0	0	0	0	1	0	0
3185:	0	0	0	0	0	0	1	0
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	1	1	0	0	0
3209:	0	1	0	0	0	0	1	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	1	0	0	0	0	0
3249:	1	0	0	0	0	0	0	0
3257:	0	0	0	0	1	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	1	0	1	0	1	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	0	0	0	0	0

3313:	0	1	0	0	0	0	2	0
3321:	0	1	0	0	0	0	0	0
3329:	1	0	0	0	0	0	0	0
3337:	0	0	0	0	0	2	0	0
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	1	0	0	1	0	0	0
3369:	0	0	0	0	1	0	0	0
3377:	1	0	0	0	0	0	0	0
3385:	0	1	0	0	0	1	0	0
3393:	0	0	0	0	0	1	2	0
3401:	0	0	0	0	1	0	0	0
3409:	0	0	0	0	0	0	1	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	1	0	0
3433:	0	0	1	0	0	0	1	0
3441:	0	0	2	0	0	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	1	0	0	0	0	0	0	0
3481:	1	0	0	0	0	0	0	0
3489:	1	0	0	0	0	0	0	1
3497:	0	0	0	0	0	0	1	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	2
3521:	1	0	0	0	0	0	0	1
3529:	0	0	0	0	0	0	0	0
3537:	0	0	0	0	0	1	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	0
3569:	1	0	0	2	1	0	0	0
3577:	0	0	0	0	0	0	1	0
3585:	0	0	0	0	0	0	0	2
3593:	0	0	0	0	0	0	0	0
3601:	0	0	0	1	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	1	0	0	0
3625:	0	1	0	0	1	0	0	0
3633:	1	0	0	0	0	0	0	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	0	0	1	0	1
3657:	1	1	0	0	0	0	1	0
3665:	0	0	0	0	0	1	0	0
3673:	0	0	1	0	0	0	0	0
3681:	1	0	1	0	0	1	0	0
3689:	0	0	0	0	1	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	1	0	0	0
3713:	0	1	0	0	0	1	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	1	0	0
3737:	0	0	0	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	1	0	0	0	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	1	1	0	0	0	0	0
3785:	0	0	0	1	0	0	1	0

3793:	0	0	0	1	0	0	0	0
3801:	0	0	0	1	0	0	0	1
3809:	0	0	0	0	1	1	0	1
3817:	0	0	0	0	0	1	0	0
3825:	0	0	0	0	0	0	0	0
3833:	1	0	0	1	0	0	0	0
3841:	0	0	1	0	0	0	0	0
3849:	0	0	0	0	0	1	0	0
3857:	0	0	0	0	0	0	0	0
3865:	1	1	0	0	1	0	1	0
3873:	0	0	0	0	0	0	1	0
3881:	0	0	0	0	0	0	0	1
3889:	0	0	0	0	0	2	1	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	1	0	0
3921:	0	1	0	0	0	0	0	0
3929:	0	0	0	0	0	0	1	0
3937:	0	0	1	0	0	0	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	2	0	0	0
3961:	0	0	0	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	1	0	0	0
3993:	0	0	0	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	0	0	0	0	1	0	1	1
4017:	1	1	0	1	0	0	0	0
4025:	0	0	0	1	0	0	0	0
4033:	0	0	0	0	0	0	1	0
4041:	0	1	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	1	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	1	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Sample ID : 1303013-13

Acquisition date : 1-APR-2013 16:44:35

VAX/VMS Peak Search Report Generated 1-APR-2013 17:45:00.96

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301313_GE2_GAS1202_190143.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-65-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 16:44:35.
 Sample ID : 1303013-13 Sample Quantity : 5.72100E+02 gram
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE2 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:11.03 0.3%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	45.95*	1148	5906	1.60	46.06	44	5	19.8		PB-210
0	52.58*	581	8389	1.12	52.70	50	7	52.8		
0	62.97*	1363	8377	1.51	63.09	61	5	20.9		TH-234
1	67.75	480	3574	1.47	67.87	67	14	31.7	9.44E+02	
1	75.02*	7701	7277	1.48	75.13	67	14	3.9		AM-243
0	93.75	1338	7705	1.34	93.86	91	6	21.8		
0	143.82*	425	5109	1.37	143.94	142	5	51.5		
0	153.86	611	7150	2.08	153.97	151	7	46.7		
0	185.97*	5240	6783	1.32	186.09	182	8	6.1		RA-226
1	232.05	167	2738	1.71	232.16	230	15	93.5	8.94E+01	
1	236.05	707	2677	1.71	236.16	230	15	23.2		
1	241.73	6591	2547	1.72	241.84	230	15	3.3		RA-224
0	259.15	276	2871	1.15	259.26	257	6	63.2		
4	267.63	258	2814	2.32	267.74	264	14	70.9	1.38E+01	CS-135
4	270.15	872	2762	2.33	270.26	264	14	21.5		
4	274.21	395	2692	2.34	274.32	264	14	46.3		
0	280.17	143	1915	2.58	280.28	278	5	93.1		HG-203
0	294.94*	12881	3089	1.32	295.04	291	8	2.3		PB-214
0	323.47	188	1514	1.79	323.58	322	5	63.7		RA-223
0	328.61	166	1950	1.41	328.72	327	6	85.1		LA-140
0	337.56	123	1553	1.35	337.67	336	5	97.7		
0	351.60*	21977	2802	1.66	351.70	347	10	1.6		PB-214
0	388.02	212	2048	1.14	388.12	384	8	75.2		
0	396.32	111	1173	1.74	396.42	394	5	94.3		
1	401.72	242	1417	1.87	401.83	399	10	51.3	2.83E+00	RN-219
1	405.06	239	1450	1.88	405.17	399	10	52.8		PB-211
0	424.15	303	1987	6.00	424.26	420	9	54.4		
0	454.01	107	1258	1.68	454.11	452	7	112.0		
0	462.39	123	1232	1.73	462.49	459	7	96.1		
0	468.67	96	786	2.60	468.78	467	5	90.2		
0	480.11	234	1014	1.99	480.22	477	7	47.2		
0	487.25	219	1078	1.77	487.35	484	8	53.8		LA-140
6	510.29*	201	970	2.62	510.40	505	12	56.8	8.70E-01	
6	513.83	58	622	1.77	513.93	505	12	136.9		KR-85 SR-85
0	520.46	75	694	3.58	520.57	518	6	113.4		

AG
4/2/13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	579.08	198	654	2.01	579.18	575	12	43.6	1.89E+00	
2	604.29	58	329	2.23	604.39	603	12	83.6	2.53E+00	
2	608.83*	16291	503	1.64	608.93	603	12	1.6		BI-214
0	665.23	359	599	1.47	665.33	662	7	25.0		
0	703.43	107	609	2.15	703.53	699	7	79.0		
0	719.58	103	552	1.41	719.68	717	7	78.2		
0	741.88	99	453	1.26	741.97	739	6	70.9		
0	752.51	68	492	2.65	752.61	750		7110.6		
0	767.74*	1642	685	1.72	767.84	763	10	7.8		
0	785.32	328	718	1.90	785.42	781	9	31.4		
0	805.30	310	689	2.08	805.40	802	9	32.5		
3	831.19	92	371	1.69	831.29	828	15	65.4	1.45E+00	PB-211
3	838.52	230	541	2.63	838.61	828	15	38.1		
0	845.21	76	454	2.00	845.31	843	7	95.2		
0	851.47	50	325	1.59	851.56	850		5111.8		
4	907.37	34	141	1.41	907.46	906	9	88.2	2.16E+00	
4	910.82*	117	556	2.61	910.91	906	9	72.5		
0	933.71*	782	743	2.01	933.81	929	11	15.3		
0	987.30	64	471	3.37	987.39	983		8120.4		
0	1051.32	97	468	2.60	1051.41	1047	9	82.9		
0	1068.80	50	335	2.19	1068.89	1067		7123.5		
0	1094.33	47	279	2.40	1094.42	1093		6114.5		
0	1119.56*	3451	607	2.14	1119.65	1114	12	4.4		BI-214
0	1132.45	108	392	2.18	1132.54	1128	9	68.8		
0	1154.54	431	446	2.28	1154.63	1150	10	20.7		
0	1181.53	83	310	3.81	1181.62	1177	8	77.1		
0	1206.88	97	339	1.76	1206.97	1203	8	68.9		
0	1237.34*	1261	496	2.28	1237.43	1231	12	9.0		
0	1280.25	279	390	2.20	1280.34	1276	10	29.2		
0	1302.51	98	337	4.49	1302.59	1299	10	72.7		
1	1376.86*	917	188	2.46	1376.94	1370	19	8.4	4.56E+00	
1	1384.14	171	206	2.45	1384.22	1370	19	30.8		
0	1400.33	314	282	2.29	1400.41	1396	9	22.3		
0	1407.17*	494	191	2.10	1407.25	1404	7	12.9		
0	1459.94*	541	384	2.12	1460.02	1455	11	16.5		K-40
0	1489.40	70	303	4.08	1489.48	1485	9	93.0		
0	1508.20	427	348	2.38	1508.28	1504	10	18.9		
0	1540.67	172	528	6.35	1540.75	1530	15	60.1		
0	1582.23	132	188	2.39	1582.30	1579	8	40.2		
0	1597.53	71	366	6.50	1597.61	1589		14117.7		LA-140
0	1623.04	48	150	4.92	1623.12	1618	9	97.6		
0	1629.84	23	77	2.64	1629.91	1628		5119.0		
0	1660.31	208	199	2.30	1660.38	1653	14	32.0		
5	1678.54	23	12	2.99	1678.61	1678	9	34.0	4.99E+00	
5	1683.45	44	81	2.37	1683.52	1678	9	73.0		
0	1692.26	121	92	6.45	1692.34	1687	11	36.2		
0	1728.60	627	145	2.46	1728.67	1723	12	11.1		
0	1763.40*	2830	107	2.56	1763.48	1757	13	4.1		BI-214
0	1810.36	19	47	1.96	1810.43	1807		7125.8		
1	1836.90	76	47	2.65	1836.97	1830	28	41.1	1.41E+00	
1	1846.17	367	57	2.66	1846.24	1830	28	12.7		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	1851.17	20	66	2.66	1851.24	1830	28188.7			
0	1870.92	40	61	2.32	1870.99	1869	7	71.6		
0	1908.52	27	50	2.68	1908.58	1905	8	99.4		
0	1935.21	39	77	1.89	1935.28	1931	10	90.7		
0	2016.89	40	66	8.36	2016.95	2010	14	92.4		
0	2041.52	25	35	3.06	2041.58	2038	10	97.2		
0	2076.31	20	30	7.09	2076.38	2071	12118.3			
0	2117.17	191	26	2.71	2117.23	2114	8	17.1		
0	2128.77	12	11	1.17	2128.83	2126	6110.3			
0	2191.93	19	18	3.14	2191.99	2189	8	91.6		
0	2202.72*	705	39	3.04	2202.78	2196	16	8.5		BI-214
0	2245.47	10	4	2.51	2245.53	2243	6	92.1		
0	2282.81	11	10	1.89	2282.87	2279	8114.0			
0	2292.79	45	27	3.26	2292.85	2287	14	55.7		
0	2367.17	9	4	2.89	2367.23	2363	8105.2			
0	2377.61	12	0	1.92	2377.67	2372	11	57.7		
0	2400.94	8	0	3.88	2401.00	2397	8	70.7		
0	2446.04	212	10	2.93	2446.10	2439	12	14.9		
0	2501.52	7	0	1.33	2501.57	2498	7	75.6		
0	2612.90*	34	7	2.30	2612.95	2608	9	46.9		

Total number of lines in spectrum 106
Number of unidentified lines 58
Number of lines tentatively identified by NID 48 45.28%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.414E+01	1.414E+01	0.271E+01	19.15	
PB-210	22.26Y	1.00	1.800E+01	1.805E+01	0.397E+01	21.99	
PB-211	3.28E+04Y	1.00	6.861E+00	6.861E+00	2.914E+00	42.47	
BI-214	1602.00Y	1.00	5.212E+01	5.212E+01	0.300E+01	5.75	
PB-214	1602.00Y	1.00	5.399E+01	5.399E+01	0.617E+01	11.43	
RN-219	3.28E+04Y	1.00	3.768E+00	3.768E+00	1.974E+00	52.38	
RA-223	3.28E+04Y	1.00	4.169E+00	4.169E+00	2.745E+00	65.86	
RA-224	1.41E+10Y	1.00	1.175E+02	1.175E+02	0.186E+02	15.82	
RA-226	1602.00Y	1.00	9.767E+01	9.767E+01	17.91E+01	183.34	
TH-234	4.47E+09Y	1.00	2.001E+01	2.001E+01	0.453E+01	22.61	
Total Activity :			3.883E+02	3.883E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
KR-85	10.72Y	1.01	1.646E+01	1.655E+01	2.272E+01	137.32	
SR-85	64.84D	1.37	7.197E-02	9.888E-02	13.58E-02	137.32	
Total Activity :			1.653E+01	1.665E+01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-135	2.30E+06Y	1.00	1.217E+00	1.217E+00	0.891E+00	73.23	
LA-140	12.79D	5.01	3.929E-01	1.967E+00	0.944E+00	48.02	
HG-203	46.60D	1.56	1.435E-01	2.232E-01	2.125E-01	95.18	
AM-243	7380.00Y	1.00	6.180E+00	6.180E+00	0.631E+00	10.21	
Total Activity :			7.933E+00	9.587E+00			

Grand Total Activity : 4.128E+02 4.146E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma	Status
				pCi/gram	pCi/gram	%Error	
K-40	1460.81	10.67*	4.705E-01	1.414E+01	1.414E+01	19.15	OK
Final Mean for 1 Valid Peaks = 1.414E+01+/- 2.709E+00 (19.15%)							
PB-210	46.50	4.25*	1.969E+00	1.800E+01	1.805E+01	21.99	OK
Final Mean for 1 Valid Peaks = 1.805E+01+/- 3.969E+00 (21.99%)							
PB-211	404.84	2.90*	1.290E+00	8.366E+00	8.366E+00	53.83	OK
	831.96	2.90	7.168E-01	5.778E+00	5.778E+00	66.15	OK
Final Mean for 2 Valid Peaks = 6.861E+00+/- 2.914E+00 (42.47%)							
BI-214	609.31	46.30*	9.260E-01	4.986E+01	4.986E+01	10.48	OK
	1120.29	15.10	5.678E-01	5.283E+01	5.283E+01	11.65	OK
	1764.49	15.80	4.183E-01	5.619E+01	5.619E+01	10.75	OK
	2204.22	4.98	3.725E-01	4.987E+01	4.987E+01	13.82	OK
Final Mean for 4 Valid Peaks = 5.212E+01+/- 2.996E+00 (5.75%)							
PB-214	295.21	19.19	1.631E+00	5.401E+01	5.401E+01	18.72	OK
	351.92	37.19*	1.436E+00	5.399E+01	5.399E+01	14.43	OK
Final Mean for 2 Valid Peaks = 5.399E+01+/- 6.171E+00 (11.43%)							
RN-219	401.80	6.50*	1.298E+00	3.768E+00	3.768E+00	52.38	OK
Final Mean for 1 Valid Peaks = 3.768E+00+/- 1.974E+00 (52.38%)							
RA-223	323.87	3.88*	1.527E+00	4.169E+00	4.169E+00	65.86	OK
Final Mean for 1 Valid Peaks = 4.169E+00+/- 2.745E+00 (65.86%)							
RA-224	240.98	3.95*	1.863E+00	1.175E+02	1.175E+02	15.82	OK
Final Mean for 1 Valid Peaks = 1.175E+02+/- 1.860E+01 (15.82%)							
RA-226	186.21	3.28*	2.147E+00	9.767E+01	9.767E+01	183.34	OK
Final Mean for 1 Valid Peaks = 9.767E+01+/- 1.791E+02 (183.34%)							
TH-234	63.29	3.80*	2.351E+00	2.001E+01	2.001E+01	22.61	OK
Final Mean for 1 Valid Peaks = 2.001E+01+/- 4.526E+00 (22.61%)							

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
KR-85	513.99	0.43*	1.065E+00	1.646E+01	1.655E+01	137.32	OK

Final Mean for 1 Valid Peaks = 1.655E+01+/- 2.272E+01 (137.32%)

SR-85	513.99	99.27*	1.065E+00	7.197E-02	9.888E-02	137.32	OK
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Final Mean for 1 Valid Peaks = 9.888E-02+/- 1.358E-01 (137.32%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CS-135	268.24	16.00*	1.740E+00	1.217E+00	1.217E+00	73.23	OK

Final Mean for 1 Valid Peaks = 1.217E+00+/- 8.911E-01 (73.23%)

LA-140	328.77	20.50	1.511E+00	7.050E-01	3.529E+00	86.62	OK
	487.03	45.50	1.113E+00	5.664E-01	2.835E+00	54.89	OK
	815.85	23.50	7.282E-01	-----	Line Not Found	-----	Absent
	1596.49	95.49*	4.443E-01	2.182E-01	1.092E+00	118.08	OK

Final Mean for 3 Valid Peaks = 1.967E+00+/- 9.445E-01 (48.02%)

HG-203	279.19	77.30*	1.694E+00	1.435E-01	2.232E-01	95.18	OK
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Final Mean for 1 Valid Peaks = 2.232E-01+/- 2.125E-01 (95.18%)

AM-243	74.67	66.00*	2.478E+00	6.180E+00	6.180E+00	10.21	OK
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Final Mean for 1 Valid Peaks = 6.180E+00+/- 6.309E-01 (10.21%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	1.414E+01	2.709E+00	1.982E+00	1.750E-01	7.138
KR-85	1.655E+01	2.272E+01	3.523E+01	3.513E+00	0.470
SR-85	9.888E-02	1.358E-01	2.105E-01	2.099E-02	0.470
CS-135	1.217E+00	8.911E-01	9.698E-01	1.731E-01	1.255
LA-140	1.967E+00	9.445E-01	9.955E-01	8.828E-02	1.976
HG-203	2.232E-01	2.125E-01	3.227E-01	6.199E-02	0.692
PB-210	1.805E+01	3.969E+00	4.857E+00	4.222E-01	3.716
PB-211	6.861E+00	2.914E+00	5.836E+00	5.724E-01	1.176
BI-214	5.212E+01	2.996E+00	3.400E-01	3.248E-02	153.321
PB-214	5.399E+01	6.171E+00	4.236E-01	5.832E-02	127.481
RN-219	3.768E+00	1.974E+00	2.587E+00	2.534E-01	1.457
RA-223	4.169E+00	2.745E+00	4.154E+00	6.700E-01	1.004
RA-224	1.175E+02	1.860E+01	4.200E+00	6.278E-01	27.986
RA-226	9.767E+01	1.791E+02	5.340E+00	9.784E+00	18.288
TH-234	2.001E+01	4.526E+00	5.487E+00	4.231E-01	3.647
AM-243	6.180E+00	6.309E-01	3.150E-01	2.697E-02	19.618

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	7.398E-01		1.489E+00	2.347E+00	2.345E-01	0.315
NA-22	-6.355E-02		1.349E-01	1.940E-01	1.763E-02	-0.328
AL-26	1.212E-02		7.850E-02	1.276E-01	1.170E-02	0.095
TI-44	2.767E-01	+	9.121E-02	2.339E-01	1.878E-02	1.183
SC-46	4.763E-02		1.516E-01	2.582E-01	2.190E-02	0.184
V-48	3.604E-01		4.844E-01	7.503E-01	6.791E-02	0.480
CR-51	-1.306E-01		2.345E+00	3.403E+00	5.671E-01	-0.038
MN-54	2.137E-02		1.365E-01	2.081E-01	1.824E-02	0.103
CO-56	1.489E-01		1.936E-01	2.442E-01	2.127E-02	0.610
CO-57	6.062E-02		1.246E-01	2.040E-01	2.495E-02	0.297
CO-58	-8.885E-02		1.611E-01	2.384E-01	2.119E-02	-0.373
FE-59	-5.229E-01		3.983E-01	5.470E-01	5.728E-02	-0.956
CO-60	2.472E-03		1.318E-01	1.977E-01	2.045E-02	0.013
ZN-65	2.967E+00		4.924E-01	7.123E-01	7.102E-02	4.166
SE-75	-1.754E-02		2.452E-01	3.135E-01	5.481E-02	-0.056
RB-82	4.890E-01		2.416E+00	2.959E+00	2.656E-01	0.165
RB-83	2.588E-01	+	2.967E-01	4.316E-01	7.083E-02	0.600
Y-88	2.974E-01	+	1.260E-01	2.130E-01	1.960E-02	1.396
NB-93M	-2.935E+01		1.290E+01	8.853E+00	3.496E+00	-3.316
NB-94	4.748E-02		1.164E-01	1.989E-01	1.708E-02	0.239
NB-95	4.232E+00		5.099E-01	6.206E-01	5.592E-02	6.820
ZR-95	-1.759E-01		3.045E-01	4.110E-01	4.054E-02	-0.428
RU-103	-2.811E-02		1.677E-01	2.889E-01	4.343E-02	-0.097
RU-106	-6.531E-01		9.351E-01	1.566E+00	2.179E-01	-0.417
AG-108M	5.340E-02		1.258E-01	1.953E-01	1.774E-02	0.273
CD-109	3.189E+01		5.616E+00	6.652E+00	7.599E-01	4.794
AG-110M	1.126E-01		1.175E-01	1.871E-01	1.710E-02	0.602

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
SN-113	-1.604E-03		2.485E-01	3.119E-01	3.113E-02	-0.005
TE123M	1.675E-01		1.640E-01	2.471E-01	2.230E-02	0.678
SB-124	5.698E-02		1.537E-01	2.399E-01	2.303E-02	0.238
I-125	-2.771E+00		2.836E+00	4.683E+00	5.229E-01	-0.592
SB-125	3.845E-01		3.800E-01	6.048E-01	6.074E-02	0.636
SB-126	1.635E+00	+	1.289E+00	1.804E+00	1.639E-01	0.906
SN-126	2.692E+00		4.817E-01	6.309E-01	6.138E-02	4.267
SB-127	-5.316E+00		5.578E+01	9.517E+01	8.668E+00	-0.056
I-129	3.391E-02		2.745E-01	4.641E-01	6.421E-02	0.073
I-131	-5.177E-01		1.434E+00	2.482E+00	3.124E-01	-0.209
BA-133	-5.078E-02		1.776E-01	2.546E-01	4.256E-02	-0.199
CS-134	8.611E-02	+	7.252E-02	2.321E-01	2.229E-02	0.371
CS-136	3.864E-01		8.071E-01	1.235E+00	1.203E-01	0.313
CS-137	3.408E-02		1.303E-01	2.027E-01	1.848E-02	0.168
LA-138	-1.118E-01		1.847E-01	2.960E-01	2.524E-02	-0.378
CE-139	1.371E-01		1.538E-01	2.502E-01	2.099E-02	0.548
BA-140	-1.544E+00		1.988E+00	3.241E+00	1.086E+00	-0.477
CE-141	6.840E-01		4.919E-01	7.037E-01	1.754E-01	0.972
CE-144	-2.350E-01		1.019E+00	1.653E+00	1.860E-01	-0.142
PM-144	-2.593E-02		1.126E-01	1.710E-01	1.559E-02	-0.152
PM-145	-2.368E-01		5.977E-01	9.660E-01	6.318E-01	-0.245
PM-146	3.007E-01	+	3.382E-01	4.343E-01	4.328E-02	0.692
ND-147	2.171E+00		4.706E+00	8.190E+00	8.137E-01	0.265
EU-152	9.035E+00	+	1.564E+00	2.268E+00	2.446E-01	3.984
GD-153	-5.826E-01		4.682E-01	7.490E-01	8.044E-02	-0.778
EU-154	-1.762E-01		3.741E-01	5.379E-01	4.888E-02	-0.327
EU-155	3.806E-01		4.943E-01	7.541E-01	7.258E-02	0.505
EU-156	-1.851E+00		4.497E+00	6.677E+00	1.531E+00	-0.277
HO-166M	-1.040E-01		2.061E-01	3.085E-01	2.806E-02	-0.337
HF-172	2.244E-02		9.122E-01	1.487E+00	1.771E-01	0.015
LU-172	3.721E+00	+	4.281E+00	6.933E+00	6.806E-01	0.537
LU-173	3.024E+00		8.536E-01	9.175E-01	1.678E-01	3.296
HF-175	-8.883E-02		2.137E-01	2.658E-01	3.862E-02	-0.334
LU-176	1.834E-02		1.072E-01	1.702E-01	2.958E-02	0.108
TA-182	2.593E+01		2.967E+00	2.230E+00	2.231E-01	11.625
IR-192	3.008E-01	+	2.731E-01	4.537E-01	4.530E-02	0.663
BI-207	5.572E-02		1.091E-01	1.714E-01	1.679E-02	0.325
TL-208	4.182E-01		3.326E-01	5.856E-01	5.692E-02	0.714
BI-210M	8.005E-02		2.737E-01	3.533E-01	6.064E-02	0.227
BI-212	2.025E-01		9.302E-01	1.435E+00	1.303E-01	0.141
PB-212	1.681E+00		3.610E-01	4.428E-01	6.514E-02	3.796
RA-225	-4.593E-01		1.661E+00	2.573E+00	2.542E-01	-0.178
TH-227	4.278E+00	+	1.180E+00	1.623E+00	2.345E-01	2.635
AC-228	8.343E-01	+	6.096E-01	7.780E-01	6.632E-02	1.072
TH-230	7.061E+01	+	2.327E+01	5.956E+01	4.774E+00	1.186
PA-231	7.990E-01		4.851E+00	7.088E+00	1.252E+00	0.113
TH-231	1.112E+00		1.315E+00	2.225E+00	3.826E-01	0.500
PA-233	2.041E-01		5.585E-01	8.860E-01	2.376E-01	0.230

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
PA-234	-7.796E-02		4.973E-01	8.079E-01	9.251E-02	-0.097
PA-234M	2.595E+00		1.317E+01	2.228E+01	2.044E+00	0.116
U-235	2.230E+00	+	1.222E+00	1.724E+00	3.179E-01	1.293
NP-237	9.242E-01		1.198E+00	1.829E+00	1.760E-01	0.505
AM-241	7.713E-01		4.263E-01	5.875E-01	4.392E-02	1.313
CM-243	7.552E-01		8.893E-01	1.150E+00	2.176E-01	0.656

Total number of lines in spectrum 106
Number of unidentified lines 58
Number of lines tentatively identified by NID 48 45.28%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
K-40	1.28E+09Y	1.00	1.414E+01	1.414E+01	0.271E+01	19.15	
PB-210	22.26Y	1.00	1.800E+01	1.805E+01	0.397E+01	21.99	
PB-211	3.28E+04Y	1.00	6.861E+00	6.861E+00	2.914E+00	42.47	
BI-214	1602.00Y	1.00	5.212E+01	5.212E+01	0.300E+01	5.75	
PB-214	1602.00Y	1.00	5.399E+01	5.399E+01	0.617E+01	11.43	
RN-219	3.28E+04Y	1.00	3.768E+00	3.768E+00	1.974E+00	52.38	
RA-223	3.28E+04Y	1.00	4.169E+00	4.169E+00	2.745E+00	65.86	
RA-224	1.41E+10Y	1.00	1.175E+02	1.175E+02	0.186E+02	15.82	
RA-226	1602.00Y	1.00	9.767E+01	9.767E+01	17.91E+01	183.34	
TH-234	4.47E+09Y	1.00	2.001E+01	2.001E+01	0.453E+01	22.61	
Total Activity :			3.883E+02	3.883E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
KR-85	10.72Y	1.01	1.646E+01	1.655E+01	2.272E+01	137.32	
SR-85	64.84D	1.37	7.197E-02	9.888E-02	13.58E-02	137.32	
Total Activity :			1.653E+01	1.665E+01			

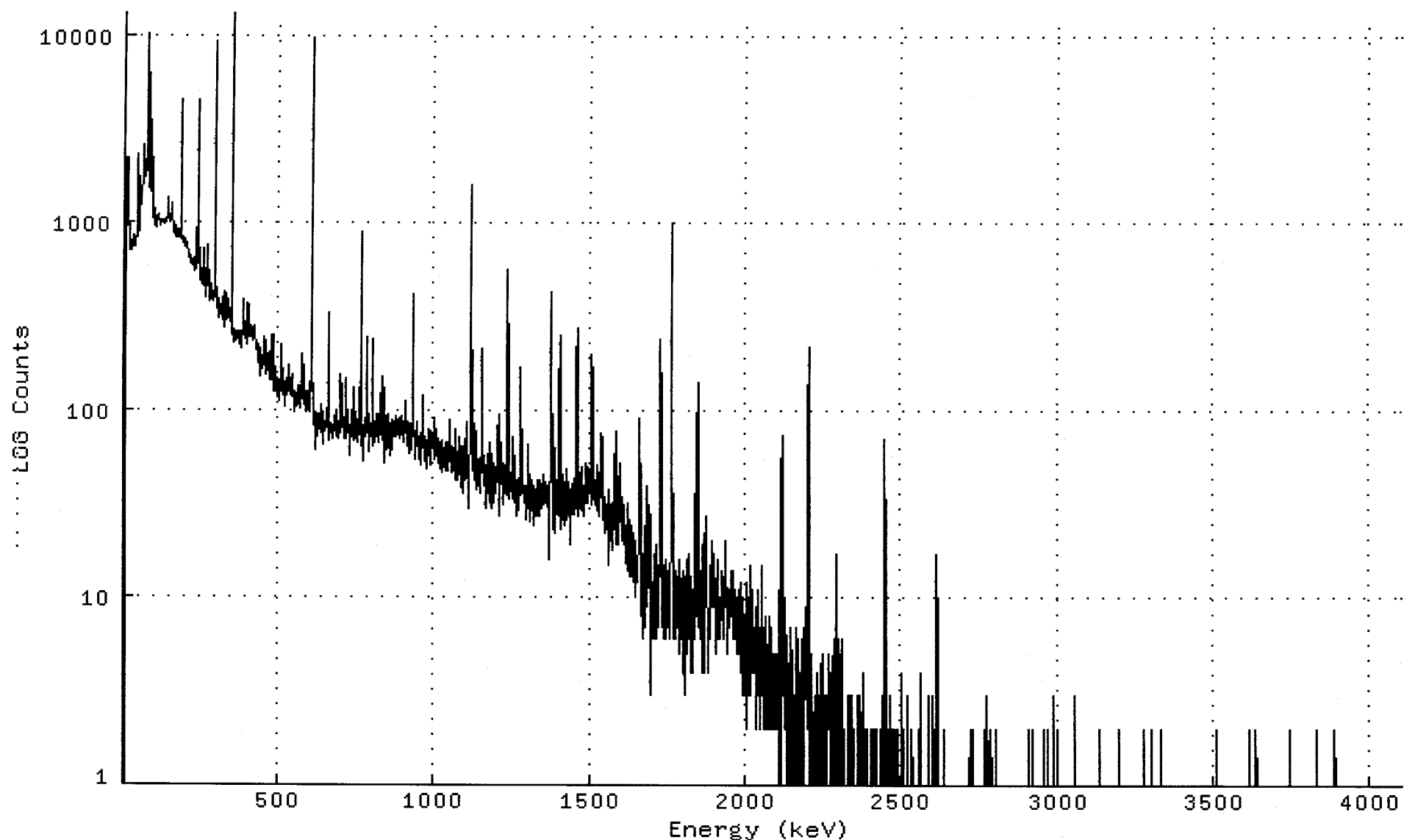
Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			pCi/gram	pCi/gram	2-Sigma Error	%Error	
CS-135	2.30E+06Y	1.00	1.217E+00	1.217E+00	0.891E+00	73.23	
LA-140	12.79D	5.01	3.929E-01	1.967E+00	0.944E+00	48.02	
HG-203	46.60D	1.56	1.435E-01	2.232E-01	2.125E-01	95.18	
AM-243	7380.00Y	1.00	6.180E+00	6.180E+00	0.631E+00	10.21	
Total Activity :			7.933E+00	9.587E+00			

Grand Total Activity : 4.128E+02 4.146E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

2000



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE] SMP_130301313_GE2_GAS1202_1901

Channel

1:	0	0	0	0	0	158	1167	1945
9:	1895	2157	1493	1838	2163	1017	934	1069
17:	918	852	783	775	702	705	701	778
25:	736	719	774	766	729	729	762	834
33:	764	724	734	789	775	754	767	821
41:	827	871	903	942	1024	1976	2273	887
49:	974	1262	1100	1107	1698	1357	1213	1240
57:	1281	1408	1497	1580	1684	1814	2528	2074
65:	1695	1715	1848	2117	1736	1860	1785	1854
73:	1907	3385	6301	3200	9799	3753	1971	1735
81:	1995	1501	1697	2636	1422	1531	3436	2502
89:	1543	2114	1329	1754	2169	1350	1413	1028
97:	991	1159	1003	1006	976	951	932	932
105:	975	1054	952	999	1055	1011	1010	1041
113:	1091	1027	1013	1022	1017	957	947	1000
121:	994	994	1017	981	999	1002	1010	994
129:	963	1016	980	981	1014	999	1004	991
137:	1030	1027	998	1030	1029	1037	1090	1325
145:	1115	991	1038	1057	1044	1023	1074	1103
153:	1112	1243	1159	1036	1034	969	990	933
161:	926	869	920	935	936	896	923	841
169:	830	871	900	887	850	863	815	844
177:	855	825	886	858	879	904	849	865
185:	1534	4450	1882	810	824	796	769	799
193:	767	793	777	801	807	736	736	777
201:	756	735	753	712	765	720	675	646
209:	649	682	673	635	633	596	635	652
217:	622	608	622	597	614	577	605	625
225:	607	598	637	558	572	539	555	650
233:	551	558	724	928	580	663	642	595
241:	1785	4458	1067	478	496	513	519	490
249:	491	484	476	461	523	495	516	615
257:	510	560	712	476	465	424	425	395
265:	412	425	474	421	742	681	676	526
273:	456	546	548	421	382	375	424	414
281:	460	385	387	445	440	420	396	421
289:	373	371	382	386	415	2127	9059	2820
297:	408	390	401	439	343	379	362	360
305:	385	367	319	336	316	320	305	346
313:	355	343	338	318	331	310	341	323
321:	312	299	372	423	335	273	329	354
329:	361	411	331	330	354	342	297	332
337:	327	383	331	303	313	320	316	295
345:	321	293	344	336	357	630	7503	13067
353:	1809	247	253	264	230	224	239	262
361:	258	232	246	253	241	250	237	251
369:	244	257	251	246	253	221	242	259
377:	248	231	235	226	213	237	262	239
385:	249	287	305	293	388	246	253	268
393:	246	235	245	284	299	221	240	230
401:	327	367	253	292	357	279	264	255
409:	240	241	267	251	267	268	277	267
417:	259	271	240	233	257	264	265	280
425:	267	262	257	205	212	219	231	231

433:	208	195	197	220	194	174	192	181
441:	196	186	183	210	208	150	170	194
449:	186	180	190	173	202	241	207	197
457:	175	170	187	154	220	233	181	190
465:	190	158	168	186	190	195	143	164
473:	151	199	154	145	162	147	184	250
481:	211	142	152	125	133	207	249	155
489:	136	168	124	140	141	137	159	137
497:	136	126	116	132	133	141	129	111
505:	123	140	115	130	172	216	220	158
513:	145	162	130	120	133	119	139	135
521:	140	134	102	115	127	123	134	118
529:	141	130	121	129	165	171	132	136
537:	143	123	126	129	118	146	128	142
545:	116	153	120	127	122	139	104	111
553:	109	125	96	102	102	102	113	120
561:	117	111	124	134	105	116	127	125
569:	133	120	121	131	131	115	100	121
577:	124	122	196	190	121	156	170	132
585:	110	110	113	97	109	118	111	124
593:	112	105	107	123	121	108	99	104
601:	97	102	118	140	108	139	280	3980
609:	9389	2994	188	98	82	85	91	100
617:	94	82	84	77	97	60	88	73
625:	91	82	94	72	83	77	86	94
633:	88	88	89	78	76	75	105	80
641:	80	93	87	97	89	84	65	70
649:	85	76	82	78	76	79	87	82
657:	93	93	80	89	113	74	68	156
665:	329	171	85	75	84	79	76	78
673:	83	81	71	70	81	82	71	80
681:	89	84	92	76	86	71	88	80
689:	83	97	80	85	73	69	81	80
697:	79	90	74	75	80	125	153	123
705:	86	97	97	87	80	85	75	81
713:	84	89	69	72	70	78	109	147
721:	78	94	79	91	90	84	98	82
729:	67	57	81	73	82	72	80	80
737:	89	84	71	97	83	131	90	80
745:	68	89	73	79	74	70	78	97
753:	94	84	71	66	72	72	66	77
761:	85	78	82	76	121	140	452	882
769:	361	90	73	53	64	81	78	72
777:	62	78	73	82	78	89	76	99
785:	241	204	92	93	74	85	87	59
793:	70	94	62	65	81	75	84	74
801:	71	78	78	82	195	234	130	63
809:	68	71	85	72	72	73	72	81
817:	77	71	78	94	93	72	74	67
825:	95	81	73	82	74	76	122	113
833:	68	72	79	77	81	144	150	116
841:	77	52	77	72	80	92	75	73
849:	61	69	79	94	71	62	68	72
857:	64	83	77	69	71	56	70	81
865:	61	75	73	77	87	83	72	85
873:	78	77	81	78	89	77	72	77
881:	91	74	76	73	78	84	87	81
889:	77	74	76	83	89	69	74	83
897:	85	90	84	92	70	82	85	66
905:	75	67	91	81	74	111	95	97

913:	77	63	74	73	79	81	80	59
921:	74	66	58	83	61	72	72	82
929:	66	83	61	111	375	414	123	72
937:	76	75	71	54	69	67	70	85
945:	64	63	75	63	66	59	54	64
953:	57	71	59	61	62	71	74	50
961:	63	81	102	118	72	62	75	69
969:	68	53	54	60	55	61	58	52
977:	68	48	61	61	67	76	57	70
985:	66	78	75	70	63	56	50	71
993:	73	62	71	62	62	71	61	89
1001:	75	54	54	58	66	59	62	57
1009:	78	59	59	70	66	58	51	52
1017:	59	66	51	48	53	52	58	53
1025:	57	46	57	57	68	58	53	62
1033:	49	57	51	49	66	50	47	48
1041:	47	47	67	56	59	55	49	54
1049:	54	73	87	78	58	63	49	55
1057:	58	48	54	46	47	52	49	62
1065:	56	53	42	63	69	79	42	45
1073:	45	51	44	42	59	47	55	72
1081:	47	45	52	55	44	62	46	38
1089:	52	64	57	36	45	64	63	57
1097:	52	45	56	42	56	47	56	85
1105:	55	44	54	52	43	48	57	30
1113:	57	42	53	61	62	299	1235	1553
1121:	523	83	47	53	51	52	50	42
1129:	56	56	47	59	83	70	50	37
1137:	46	52	51	39	46	42	43	43
1145:	54	46	48	45	44	42	45	36
1153:	87	213	204	100	58	53	39	53
1161:	43	47	41	57	34	50	30	44
1169:	45	33	37	42	58	38	44	56
1177:	32	45	45	67	59	59	56	30
1185:	39	37	43	43	45	42	46	52
1193:	32	46	45	49	36	48	47	40
1201:	48	44	52	41	48	61	72	93
1209:	42	27	49	54	47	43	40	40
1217:	40	66	47	51	32	45	45	31
1225:	38	36	47	36	48	50	37	55
1233:	35	44	50	216	557	461	181	49
1241:	37	37	41	33	38	44	37	43
1249:	46	43	43	57	64	71	48	33
1257:	56	41	35	41	40	32	42	35
1265:	27	36	35	35	43	38	35	36
1273:	29	35	45	37	38	35	103	168
1281:	118	51	42	41	36	39	36	36
1289:	33	32	36	37	39	36	26	39
1297:	37	30	34	30	55	55	65	39
1305:	56	34	42	25	45	35	45	34
1313:	39	29	37	41	42	33	39	36
1321:	32	36	35	24	37	35	35	29
1329:	28	27	28	33	27	42	33	38
1337:	41	32	31	35	27	42	38	30
1345:	39	30	36	34	33	43	34	34
1353:	31	45	33	39	32	38	41	36
1361:	33	36	31	31	39	35	32	28
1369:	34	16	40	40	41	41	69	280
1377:	420	201	75	58	23	35	57	95
1385:	81	47	22	26	34	34	35	28

1393:	32	42	28	30	36	36	58	131
1401:	164	87	31	23	44	109	245	166
1409:	71	29	26	31	35	34	40	30
1417:	24	41	37	28	26	31	27	38
1425:	48	26	35	33	34	32	41	33
1433:	28	35	32	34	37	34	19	37
1441:	30	40	31	32	28	28	28	38
1449:	35	43	31	39	30	40	32	45
1457:	33	56	173	270	146	74	49	27
1465:	32	36	35	38	46	38	30	49
1473:	31	36	42	29	36	32	33	39
1481:	38	35	27	37	32	40	35	52
1489:	50	42	49	39	34	32	46	39
1497:	36	48	39	36	37	42	33	31
1505:	37	49	111	198	147	81	39	49
1513:	33	41	32	31	42	33	38	36
1521:	29	32	32	46	35	50	27	44
1529:	46	42	36	38	41	34	36	51
1537:	58	75	46	34	42	70	71	26
1545:	27	34	22	26	28	34	29	30
1553:	28	26	23	31	27	33	33	15
1561:	37	30	34	29	20	22	23	26
1569:	22	27	21	28	29	18	32	27
1577:	40	27	23	30	44	77	63	42
1585:	19	22	23	27	29	20	19	27
1593:	40	44	31	27	32	42	52	31
1601:	20	23	26	20	30	34	28	22
1609:	20	19	31	19	22	18	21	21
1617:	24	16	14	28	22	32	27	24
1625:	22	13	15	15	23	23	26	13
1633:	18	23	21	17	24	15	22	17
1641:	18	13	12	14	10	16	20	13
1649:	11	15	16	13	14	12	14	20
1657:	18	19	43	78	89	30	22	13
1665:	13	22	8	15	15	6	17	14
1673:	8	7	12	14	10	13	24	10
1681:	9	16	39	22	17	9	14	14
1689:	20	22	28	31	22	28	11	20
1697:	3	9	12	10	6	10	6	12
1705:	6	8	17	8	13	9	19	12
1713:	6	7	12	8	13	13	11	7
1721:	14	15	14	13	14	22	82	225
1729:	239	106	25	14	11	7	13	15
1737:	6	11	12	14	9	16	8	6
1745:	9	7	6	8	7	14	13	7
1753:	8	15	11	6	10	8	11	21
1761:	76	401	988	924	404	67	19	6
1769:	8	9	10	10	7	6	9	14
1777:	9	11	7	10	10	7	8	13
1785:	10	10	5	6	5	16	10	6
1793:	12	10	7	7	9	11	4	14
1801:	9	9	13	8	5	3	7	7
1809:	8	16	14	9	5	11	10	17
1817:	10	8	10	6	16	5	4	13
1825:	8	13	6	9	4	7	5	9
1833:	11	6	14	21	36	26	7	11
1841:	11	12	8	28	67	140	113	48
1849:	14	7	16	10	9	14	7	6
1857:	9	8	13	4	9	4	7	19
1865:	7	11	11	7	4	18	27	20

1873:	13	10	9	13	6	7	8	8
1881:	8	4	12	10	6	9	13	11
1889:	20	13	9	17	11	9	16	17
1897:	15	17	10	9	10	9	9	7
1905:	5	8	10	16	14	11	6	7
1913:	6	10	10	9	9	6	9	8
1921:	11	11	14	8	8	7	8	10
1929:	13	6	10	9	10	14	20	13
1937:	13	10	8	9	6	11	5	9
1945:	8	11	8	10	7	10	8	14
1953:	10	10	10	11	6	7	12	8
1961:	14	10	7	8	7	11	8	6
1969:	6	5	5	10	7	7	9	11
1977:	9	5	6	10	12	8	8	6
1985:	7	9	5	3	4	10	8	8
1993:	7	5	8	6	3	4	6	5
2001:	2	5	10	8	12	5	3	8
2009:	7	3	10	5	3	12	14	15
2017:	9	5	4	7	4	11	4	5
2025:	4	7	7	4	5	4	5	9
2033:	2	6	9	7	3	4	10	8
2041:	11	5	3	5	7	5	2	5
2049:	4	5	9	15	4	3	7	6
2057:	4	7	2	3	2	5	8	3
2065:	7	2	5	4	4	3	2	4
2073:	4	8	8	3	3	3	2	7
2081:	4	2	3	4	4	3	5	4
2089:	2	2	3	2	4	4	4	2
2097:	5	2	5	3	3	4	5	4
2105:	0	4	5	5	11	3	5	2
2113:	2	1	11	43	73	54	26	6
2121:	3	6	4	2	3	2	2	10
2129:	4	4	1	2	1	5	4	4
2137:	3	2	2	1	2	4	3	3
2145:	1	7	4	3	3	5	1	1
2153:	2	1	3	2	2	3	2	2
2161:	2	2	1	6	7	3	6	1
2169:	3	5	1	3	1	2	2	4
2177:	2	6	3	3	1	2	3	1
2185:	2	4	7	2	2	4	9	5
2193:	8	3	3	3	2	6	5	17
2201:	89	204	217	134	48	7	1	3
2209:	5	2	3	1	1	2	2	1
2217:	1	1	1	2	3	0	3	2
2225:	0	1	4	2	3	0	4	1
2233:	3	1	2	1	0	1	2	4
2241:	3	2	0	4	5	3	2	0
2249:	1	2	2	1	3	1	0	3
2257:	1	1	1	2	1	2	3	2
2265:	5	2	2	4	2	2	1	2
2273:	3	4	0	1	3	2	1	1
2281:	4	6	3	2	3	1	1	1
2289:	4	7	17	9	15	4	5	6
2297:	1	1	1	0	5	1	1	2
2305:	1	2	0	1	2	6	3	1
2313:	1	1	0	2	2	0	1	1
2321:	1	1	0	1	1	1	1	3
2329:	1	3	0	2	3	3	1	0
2337:	3	1	1	0	3	2	2	0
2345:	1	1	0	2	1	0	1	1

2353:	0	0	1	0	1	1	0	3
2361:	0	1	1	1	2	1	3	2
2369:	2	0	0	0	1	1	1	0
2377:	0	4	3	1	1	0	0	2
2385:	0	0	1	1	0	0	2	0
2393:	0	1	1	0	0	0	1	2
2401:	2	2	1	0	0	0	1	2
2409:	1	1	2	0	0	1	1	2
2417:	0	0	2	0	1	2	0	1
2425:	0	1	0	1	0	0	0	1
2433:	2	1	1	2	0	2	1	1
2441:	3	1	5	22	44	69	44	26
2449:	6	0	0	1	1	1	0	1
2457:	2	1	1	1	3	1	1	3
2465:	0	0	2	2	1	1	0	2
2473:	0	1	0	1	2	0	2	0
2481:	2	0	0	0	2	0	1	0
2489:	0	0	1	0	1	0	0	0
2497:	0	0	1	0	1	4	1	0
2505:	0	0	0	1	0	0	0	1
2513:	1	0	1	0	3	2	0	0
2521:	1	1	0	0	0	0	0	1
2529:	0	0	1	0	2	0	1	0
2537:	0	1	0	1	0	1	0	1
2545:	0	0	1	0	0	1	0	0
2553:	0	0	2	0	0	2	0	4
2561:	1	0	0	1	1	1	1	0
2569:	0	0	0	0	0	0	0	0
2577:	1	0	0	0	0	0	0	0
2585:	3	0	1	1	0	0	0	0
2593:	0	0	0	0	1	0	0	3
2601:	1	0	0	1	0	0	2	1
2609:	1	0	5	17	17	6	2	0
2617:	0	0	0	0	0	0	0	0
2625:	0	1	0	0	1	1	0	1
2633:	1	2	0	0	0	0	1	0
2641:	1	0	0	1	0	1	0	0
2649:	0	0	0	0	0	0	0	0
2657:	1	0	0	0	0	1	0	0
2665:	1	1	0	1	1	0	0	0
2673:	0	0	0	0	1	0	0	0
2681:	0	0	0	0	1	1	1	0
2689:	0	0	1	1	0	1	0	0
2697:	1	0	1	0	0	1	0	0
2705:	1	1	0	0	0	1	1	0
2713:	0	0	1	0	0	2	1	0
2721:	0	0	0	0	0	1	2	1
2729:	1	0	0	0	0	1	0	0
2737:	0	0	0	1	0	0	0	1
2745:	1	0	0	1	0	0	0	0
2753:	0	1	0	1	0	0	0	0
2761:	0	0	0	0	0	2	1	1
2769:	1	1	0	3	0	0	1	0
2777:	1	0	0	0	0	0	0	1
2785:	2	0	0	1	0	0	0	0
2793:	0	0	0	1	0	1	2	0
2801:	0	0	0	0	0	0	0	1
2809:	0	0	0	1	0	0	0	0
2817:	0	0	0	0	0	1	0	0
2825:	0	1	0	0	0	1	1	0

2833:	0	1	0	0	0	1	1	0
2841:	0	0	0	1	0	0	0	0
2849:	0	0	0	0	0	0	1	0
2857:	0	0	0	0	0	0	0	1
2865:	0	0	1	0	0	0	0	0
2873:	1	0	0	1	0	0	1	0
2881:	0	0	0	0	0	0	0	0
2889:	0	1	0	0	0	0	0	0
2897:	0	0	0	0	0	1	0	0
2905:	0	0	2	0	1	1	0	1
2913:	1	0	1	0	0	0	2	0
2921:	1	0	0	0	0	0	1	0
2929:	0	0	0	1	0	0	0	0
2937:	0	1	0	0	1	0	0	1
2945:	0	0	0	1	0	1	0	1
2953:	0	1	0	2	0	0	1	0
2961:	0	0	0	0	0	2	0	1
2969:	1	0	0	1	1	0	1	0
2977:	0	1	0	1	1	0	0	0
2985:	3	0	1	0	0	1	0	1
2993:	1	0	0	0	0	2	0	0
3001:	0	0	0	0	0	0	0	1
3009:	0	0	0	1	0	0	0	0
3017:	0	0	1	1	0	0	0	1
3025:	0	1	0	0	1	0	1	0
3033:	0	0	0	0	0	0	0	0
3041:	0	0	1	1	0	0	0	0
3049:	0	1	0	3	0	0	0	0
3057:	0	0	0	1	0	0	1	0
3065:	1	0	0	1	0	1	0	0
3073:	0	0	0	0	0	0	0	1
3081:	0	0	0	0	0	0	0	1
3089:	1	0	1	0	0	1	0	0
3097:	0	1	0	0	0	0	0	0
3105:	0	0	0	1	0	0	0	0
3113:	0	0	0	0	0	0	0	1
3121:	1	0	0	0	0	0	0	0
3129:	0	0	0	2	0	0	0	1
3137:	0	0	1	0	0	0	0	0
3145:	0	0	0	0	0	0	1	0
3153:	0	0	0	0	0	0	0	0
3161:	0	0	0	1	0	0	0	0
3169:	1	0	1	0	0	1	0	0
3177:	0	0	0	0	0	1	0	1
3185:	0	0	1	0	1	1	0	2
3193:	0	0	0	0	0	0	0	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	1	0	0	0
3217:	0	0	0	0	1	0	0	0
3225:	1	0	0	0	0	0	0	0
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	0	0	0
3249:	0	0	0	0	0	1	0	0
3257:	0	0	1	0	1	0	0	0
3265:	0	1	0	0	0	0	0	0
3273:	2	0	0	0	0	0	0	0
3281:	0	1	0	0	0	0	0	1
3289:	0	0	1	0	0	0	0	2
3297:	0	0	1	0	0	0	0	0
3305:	1	0	0	0	0	1	1	0

3313:	0	0	1	0	0	0	1	0
3321:	0	0	1	0	0	0	0	1
3329:	0	2	0	0	1	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	1	0	0	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	0	0	1	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	1	0	0	0	0	0	0
3385:	0	0	0	0	0	1	1	0
3393:	0	0	0	0	0	0	0	0
3401:	1	0	0	0	0	0	0	0
3409:	0	0	0	0	0	0	0	0
3417:	0	0	1	0	0	1	0	0
3425:	0	0	0	0	0	1	0	1
3433:	0	1	0	0	0	0	0	0
3441:	0	0	0	0	0	0	0	1
3449:	0	0	0	0	1	0	0	0
3457:	0	0	0	0	1	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	0	1	0	0	0	0
3481:	0	0	0	0	0	0	0	0
3489:	0	0	0	0	0	1	0	0
3497:	0	1	0	0	0	0	0	0
3505:	2	0	1	0	0	0	0	0
3513:	1	1	0	0	1	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	1	0	1	1	0
3537:	0	1	0	1	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	1	0	0	0
3569:	0	0	0	0	0	0	0	0
3577:	0	1	0	0	0	1	0	0
3585:	0	0	1	0	0	0	0	0
3593:	0	0	0	0	1	0	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	2	1	0	0	0	0
3617:	0	0	1	0	0	0	0	0
3625:	0	0	0	0	0	0	0	2
3633:	0	0	0	0	0	0	0	1
3641:	0	0	0	0	0	0	0	0
3649:	0	1	0	0	0	0	0	0
3657:	0	0	0	1	0	0	0	0
3665:	0	0	1	0	0	1	0	0
3673:	1	0	0	0	0	0	1	0
3681:	0	0	1	0	1	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	1	0	0	0	0	1	0	0
3705:	0	0	0	0	0	0	0	1
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	0	0	0	0	0	0	0	1
3737:	0	0	0	0	2	1	0	0
3745:	0	0	1	0	0	0	1	0
3753:	0	0	0	0	0	0	0	1
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0

3793:	0	0	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	1	0	1
3817:	0	0	1	0	0	1	0	0
3825:	0	2	0	0	0	0	0	0
3833:	1	0	0	0	0	0	0	0
3841:	0	0	0	0	1	0	0	0
3849:	0	0	0	0	0	0	0	0
3857:	0	0	0	0	0	0	0	1
3865:	0	1	0	0	0	0	0	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	0	2	0	1	0	0
3889:	0	0	1	0	1	0	1	0
3897:	0	0	0	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	1	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	1	1	0	0	0	1	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	0	1	0	1	0
3961:	0	0	0	0	0	0	0	0
3969:	0	1	0	0	0	0	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	1	0	0	0	0	0
3993:	0	0	1	1	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	1	0	0	0	0	0	0	0
4017:	0	0	0	0	1	0	1	0
4025:	0	0	1	0	0	0	0	0
4033:	0	0	0	0	0	1	0	0
4041:	1	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	0
4057:	1	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	1	0	1	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Sample ID : 1303013-14

Page : 1
Acquisition date : 1-APR-2013 17:51:03

VAX/VMS Peak Search Report Generated 1-APR-2013 18:51:40.86

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301314_GE1_GAS1202_190147.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : MQZ-66-130303
Deposition Date :
Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 1-APR-2013 17:51:03.
Sample ID : 1303013-14 Sample Quantity : 5.86400E+02 gram
Sample type : SOLID Sample Geometry : 0
Detector name : GE1 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:22.85 0.6%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	46.35*	4426	8170	1.59	46.58	44	5	6.8		PB-210
0	52.25*	1343	14234	1.50	52.48	50	7	29.9		
0	62.89*	1176	18284	1.80	63.12	61	6	36.8		TH-234
0	67.58*	896	12412	1.18	67.81	67	4	35.9		
0	76.43*	34554	34088	3.53	76.66	71	12	2.4		
0	87.86*	6748	14522	1.84	88.09	86	6	6.2		NP-237 SN-126 CD-109
0	93.53*	2168	10014	1.15	93.76	92	5	14.7		
0	143.89*	601	10681	1.73	144.12	142	6	55.0		
0	153.97	740	10644	1.82	154.19	152	6	44.8		
0	186.15*	8746	13222	1.83	186.38	182	9	5.2		RA-226
2	235.82	1357	5686	1.94	236.04	233	14	18.1	1.72E+01	
2	241.98*	10212	3567	1.39	242.20	233	14	2.6		RA-224
1	255.91	513	4047	1.78	256.13	253	10	38.3	1.52E+01	
1	258.62	858	4044	1.79	258.84	253	10	23.5		
5	270.16	1794	5816	2.63	270.38	266	12	15.5	7.77E+00	
5	274.78	444	2891	1.40	275.00	266	12	35.5		
0	295.21*	21594	6272	1.88	295.42	291	9	1.9		PB-214
0	324.07	212	2739	1.20	324.29	323	5	75.4		RA-223
6	349.30	336	3416	2.40	349.51	346	12	117.1	1.69E+00	
6	351.91*	38325	1782	1.42	352.12	346	12	1.1		PB-214
0	387.87	547	3284	3.58	388.08	384	8	37.3		
2	401.88	392	2529	2.08	402.08	397	12	41.7	2.31E+00	RN-219
2	405.43	330	2477	2.08	405.64	397	12	49.5		PB-211
0	428.14	181	2616	2.80	428.34	425	7	95.2		
0	455.17	251	1983	1.75	455.38	452	7	60.2		
0	462.17	245	1891	2.76	462.37	459	7	60.4		
0	474.97	91	1339	1.04	475.17	472	5	123.0		
0	480.06	269	1783	1.84	480.26	478	7	53.5		
0	486.77	334	1707	2.07	486.97	484	7	42.4		
0	510.29*	303	2395	3.04	510.49	506	10	61.8		
0	527.33	141	1429	1.63	527.52	524	7	90.8		
0	534.49	278	1809	1.65	534.69	531	9	56.3		
0	580.82	267	1949	1.64	581.01	576	10	63.1		
0	597.83	87	1073	2.55	598.02	596	6	121.1		

AG
4/2/13

0299

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	609.31*	27978	1845	1.98	609.50	604	11	1.3		BI-214
0	632.91	89	920	3.94	633.10	630		7114.9		
0	665.65	766	1192	1.85	665.84	662	8	17.3		
0	702.57	248	1128	1.89	702.76	700	8	48.5		
0	719.77	152	1096	1.58	719.96	716	8	77.1		
0	741.84	111	1017	1.76	742.02	739		8101.0		
0	768.35	2499	1371	2.04	768.53	763	11	7.0		
0	785.97	594	1109	1.69	786.15	782	9	21.9		
0	806.11	608	1057	1.91	806.29	801	9	20.9		
0	831.46	107	771	1.39	831.63	829	6	83.9		PB-211
0	839.53	349	1108	1.52	839.71	836	9	36.1		
0	880.23	92	888	3.94	880.41	878		7109.3		
0	934.13*	1420	956	1.86	934.30	930	8	9.2		
0	963.86*	244	1128	2.42	964.02	958	11	54.8		
0	975.63	100	752	5.46	975.80	973	8	97.5		
0	999.97*	228	892	5.76	1000.13	996	10	50.7		PA-234M
0	1051.65	127	790	1.64	1051.81	1048	9	81.7		
0	1069.14	155	766	2.04	1069.30	1065	10	68.3		
0	1103.23	139	673	4.04	1103.39	1099	9	69.6		
0	1120.29*	6061	784	2.10	1120.45	1116	10	3.1		BI-214
0	1133.66	210	770	3.01	1133.82	1128	11	53.0		
0	1155.18	602	798	2.09	1155.33	1151	9	18.8		
0	1183.01	91	548	2.75	1183.16	1179	8	91.9		
0	1207.81	197	602	1.84	1207.96	1204	9	47.2		
0	1217.99	65	396	1.22	1218.14	1216	6	99.6		
0	1238.08	2161	625	2.08	1238.23	1233	10	6.1		
0	1254.12	112	546	2.47	1254.27	1250	8	74.6		
0	1281.40	517	657	2.20	1281.54	1276	11	21.2		
0	1342.00	51	280	3.02	1342.14	1340		6106.9		
0	1377.64*	1650	583	2.13	1377.78	1372	11	7.5		
0	1385.14	281	450	2.35	1385.28	1383	9	29.6		
3	1401.57	469	376	2.27	1401.71	1397	15	16.5	1.81E+00	
3	1407.97	824	325	1.92	1408.11	1397	15	9.8		
0	1460.56*	725	630	1.93	1460.70	1455	12	15.7		K-40
0	1509.09	668	757	2.13	1509.22	1503	12	18.2		
3	1538.64	201	371	2.23	1538.77	1535	15	34.6	4.88E-01	
3	1543.39	178	451	2.88	1543.52	1535	15	47.7		
0	1583.75	278	382	2.18	1583.87	1579	11	30.0		
2	1594.87	110	267	2.63	1594.99	1591	12	56.2	7.85E-01	
2	1599.23	159	219	2.23	1599.35	1591	12	35.8		
0	1661.42	348	208	2.26	1661.54	1657	8	17.9		
0	1683.75	86	216	1.50	1683.87	1679	10	67.3		
0	1693.22	65	192	2.57	1693.34	1689	9	81.0		
0	1729.68	1001	297	2.26	1729.80	1722	16	10.0		
0	1764.45*	4848	208	2.29	1764.56	1758	14	3.1		BI-214
0	1838.37	103	138	2.34	1838.47	1834	9	45.4		
0	1847.43	680	135	2.31	1847.53	1843	9	9.8		
0	1873.17	91	125	2.50	1873.27	1868	10	50.6		
1	1890.12	40	105	2.48	1890.23	1884	17	86.7	1.74E+00	
1	1896.12	35	101	2.49	1896.23	1884		17104.0		
0	1936.88	50	105	4.81	1936.98	1933	9	79.1		

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1968.53	38	70	1.53	1968.63	1965	7	80.4		
0	2010.97	22	42	2.67	2011.07	2009	51	00.3		
0	2110.31	32	36	1.96	2110.40	2107	7	71.9		
0	2118.43*	353	42	2.67	2118.52	2114	11	12.8		
0	2136.15	11	13	1.34	2136.24	2134	61	20.6		
3	2193.14	23	41	3.11	2193.23	2187	271	19.8	1.36E+00	
3	2203.90	1295	38	2.38	2203.98	2187	27	5.8		BI-214
2	2292.83	84	13	2.80	2292.91	2288	15	25.9	4.92E+00	
2	2298.39	19	21	2.86	2298.47	2288	15	97.8		
0	2368.60	6	0	1.92	2368.67	2367	5	81.6		
2	2443.94	13	1	2.40	2444.00	2443	15	5.6	3.77E+00	
2	2447.44	388	4	2.60	2447.50	2443	15	10.2		
0	2505.78	7	4	1.74	2505.84	2501	81	18.4		
0	2587.35	5	0	1.24	2587.40	2584	6	89.4		
6	2610.50	7	0	3.92	2610.56	2609	9	73.0	2.22E+00	
6	2614.46*	24	2	2.12	2614.51	2609	9	53.3		
0	2694.77	6	2	1.98	2694.82	2691	81	17.9		
0	2920.84	8	0	2.70	2920.88	2917	7	70.7		
0	3052.69	7	0	1.32	3052.71	3049	6	75.6		

Total number of lines in spectrum 104
Number of unidentified lines 68
Number of lines tentatively identified by NID 36 34.62%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.725E+01	1.725E+01	0.326E+01	18.88	
PB-210	22.26Y	1.00	5.173E+01	5.186E+01	0.580E+01	11.17	
PB-211	3.28E+04Y	1.00	8.106E+00	8.106E+00	3.649E+00	45.01	
BI-214	1602.00Y	1.00	8.299E+01	8.299E+01	0.447E+01	5.38	
PB-214	1602.00Y	1.00	8.275E+01	8.275E+01	1.355E+01	16.37	
RN-219	3.28E+04Y	1.00	5.427E+00	5.427E+00	2.344E+00	43.19	
RA-223	3.28E+04Y	1.00	4.173E+00	4.173E+00	3.313E+00	79.40	
RA-224	1.41E+10Y	1.00	1.619E+02	1.619E+02	0.372E+02	23.01	
RA-226	1602.00Y	1.00	1.441E+02	1.441E+02	2.644E+02	183.46	
PA-234M	4.47E+09Y	1.00	4.703E+01	4.703E+01	2.425E+01	51.56	
TH-234	4.47E+09Y	1.00	1.375E+01	1.375E+01	0.519E+01	37.75	
Total Activity :			6.192E+02	6.193E+02			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CD-109	464.00D	1.05	7.840E+01	8.196E+01	1.103E+01	13.46	
SN-126	1.00E+05Y	1.00	7.880E+00	7.880E+00	0.950E+00	12.05	
NP-237	2.14E+06Y	1.00	2.313E+01	2.313E+01	0.277E+01	11.97	
Total Activity :			1.094E+02	1.130E+02			

Grand Total Activity : 7.286E+02 7.323E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr		2-Sigma %Error	Status
				pCi/gram	pCi/gram		
K-40	1460.81	10.67*	5.045E-01	1.725E+01	1.725E+01	18.88	OK
Final Mean for 1 Valid Peaks = 1.725E+01+/- 3.256E+00 (18.88%)							
PB-210	46.50	4.25*	2.577E+00	5.173E+01	5.186E+01	11.17	OK
Final Mean for 1 Valid Peaks = 5.186E+01+/- 5.795E+00 (11.17%)							
PB-211	404.84	2.90*	1.415E+00	1.029E+01	1.029E+01	50.80	OK
	831.96	2.90	7.856E-01	6.031E+00	6.031E+00	84.45	OK
Final Mean for 2 Valid Peaks = 8.106E+00+/- 3.649E+00 (45.01%)							
BI-214	609.31	46.30*	1.017E+00	7.607E+01	7.607E+01	10.77	OK
	1120.29	15.10	6.174E-01	8.323E+01	8.323E+01	9.79	OK
	1764.49	15.80	4.419E-01	8.888E+01	8.889E+01	10.52	OK
	2204.22	4.98	3.841E-01	8.668E+01	8.669E+01	12.37	OK
Final Mean for 4 Valid Peaks = 8.299E+01+/- 4.469E+00 (5.38%)							
PB-214	295.21	19.19	1.787E+00	8.060E+01	8.060E+01	29.30	OK
	351.92	37.19*	1.574E+00	8.380E+01	8.380E+01	19.73	OK
Final Mean for 2 Valid Peaks = 8.275E+01+/- 1.355E+01 (16.37%)							
RN-219	401.80	6.50*	1.423E+00	5.427E+00	5.427E+00	43.19	OK
Final Mean for 1 Valid Peaks = 5.427E+00+/- 2.344E+00 (43.19%)							
RA-223	323.87	3.88*	1.674E+00	4.173E+00	4.173E+00	79.40	OK
Final Mean for 1 Valid Peaks = 4.173E+00+/- 3.313E+00 (79.40%)							
RA-224	240.98	3.95*	2.045E+00	1.619E+02	1.619E+02	23.01	OK
Final Mean for 1 Valid Peaks = 1.619E+02+/- 3.725E+01 (23.01%)							
RA-226	186.21	3.28*	2.369E+00	1.441E+02	1.441E+02	183.46	OK
Final Mean for 1 Valid Peaks = 1.441E+02+/- 2.644E+02 (183.46%)							
PA-234M	1001.03	0.92*	6.754E-01	4.703E+01	4.703E+01	51.56	OK
Final Mean for 1 Valid Peaks = 4.703E+01+/- 2.425E+01 (51.56%)							
TH-234	63.29	3.80*	2.882E+00	1.375E+01	1.375E+01	37.75	OK
Final Mean for 1 Valid Peaks = 1.375E+01+/- 5.190E+00 (37.75%)							

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/gram	Decay Corr pCi/gram	2-Sigma %Error	Status
CD-109	88.03	3.72*	2.962E+00	7.840E+01	8.196E+01	13.46	OK

Final Mean for 1 Valid Peaks = 8.196E+01 +/- 1.103E+01 (13.46%)

SN-126	87.57	37.00*	2.963E+00	7.880E+00	7.880E+00	12.05	OK
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Final Mean for 1 Valid Peaks = 7.880E+00 +/- 9.497E-01 (12.05%)

NP-237	86.50	12.60*	2.964E+00	2.313E+01	2.313E+01	11.97	OK
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Final Mean for 1 Valid Peaks = 2.313E+01 +/- 2.768E+00 (11.97%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/gram)	Act error	MDA (pCi/gram)	MDA error	Act/MDA
K-40	1.725E+01	3.256E+00	2.141E+00	2.069E-01	8.056
CD-109	8.196E+01	1.103E+01	6.751E+00	7.610E-01	12.142
SN-126	7.880E+00	9.497E-01	6.489E-01	6.198E-02	12.144
PB-210	5.186E+01	5.795E+00	5.020E+00	3.959E-01	10.333
PB-211	8.106E+00	3.649E+00	6.786E+00	7.223E-01	1.195
BI-214	8.299E+01	4.469E+00	3.944E-01	3.907E-02	210.402
PB-214	8.275E+01	1.355E+01	4.980E-01	9.610E-02	166.145
RN-219	5.427E+00	2.344E+00	3.008E+00	3.199E-01	1.804
RA-223	4.173E+00	3.313E+00	5.032E+00	1.232E+00	0.829
RA-224	1.619E+02	3.725E+01	4.943E+00	1.113E+00	32.751
RA-226	1.441E+02	2.644E+02	6.412E+00	1.175E+01	22.475
PA-234M	4.703E+01	2.425E+01	2.356E+01	2.039E+00	1.996
TH-234	1.375E+01	5.190E+00	6.100E+00	4.528E-01	2.253
NP-237	2.313E+01	2.768E+00	1.922E+00	1.815E-01	12.034

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
BE-7	1.985E+00		2.111E+00	2.686E+00	2.875E-01	0.739
NA-22	-1.036E-01		1.536E-01	2.218E-01	1.982E-02	-0.467
AL-26	6.758E-02		8.290E-02	1.484E-01	1.355E-02	0.456
TI-44	4.162E-01	+	1.536E-01	2.595E-01	2.017E-02	1.604
SC-46	-7.159E-02		1.818E-01	2.897E-01	2.536E-02	-0.247
V-48	-4.754E-01		5.396E-01	7.849E-01	6.809E-02	-0.606
CR-51	-1.204E+00		2.825E+00	4.010E+00	1.014E+00	-0.300
MN-54	-6.899E-02		1.971E-01	2.330E-01	2.099E-02	-0.296
CO-56	3.461E-02		1.785E-01	2.731E-01	2.447E-02	0.127
CO-57	5.188E-02		1.465E-01	2.355E-01	2.617E-02	0.220
CO-58	-1.294E-01		1.800E-01	2.667E-01	2.431E-02	-0.485
FE-59	-1.560E-01		4.139E-01	6.123E-01	5.610E-02	-0.255
CO-60	8.088E-02		1.404E-01	2.295E-01	1.881E-02	0.352
ZN-65	5.999E-01		3.444E-01	5.435E-01	4.570E-02	1.104
SE-75	-2.209E-01		3.091E-01	3.773E-01	1.046E-01	-0.585
RB-82	-1.030E+00		2.742E+00	3.253E+00	2.990E-01	-0.317
RB-83	-4.982E-01		3.717E-01	4.913E-01	8.249E-02	-1.014
KR-85	5.116E+01		2.859E+01	4.514E+01	4.786E+00	1.133
SR-85	3.059E-01		1.709E-01	2.699E-01	2.861E-02	1.133
Y-88	3.566E-01		1.389E-01	2.421E-01	2.199E-02	1.473
NB-93M	-3.472E+01		8.678E+00	1.270E+00	3.073E-01	-27.332
NB-94	3.231E-02		1.284E-01	2.188E-01	1.936E-02	0.148
NB-95	4.284E+00		5.236E-01	6.161E-01	5.679E-02	6.954
ZR-95	-1.822E-01		3.062E-01	4.885E-01	4.910E-02	-0.373
RU-103	-9.042E-02		1.951E-01	3.322E-01	5.145E-02	-0.272
RU-106	2.122E-01		1.099E+00	1.891E+00	2.672E-01	0.112
AG-108M	3.851E-02		1.423E-01	2.195E-01	2.035E-02	0.175
AG-110M	-1.315E-02		1.379E-01	2.113E-01	1.969E-02	-0.062
SN-113	1.767E-01		2.514E-01	3.638E-01	3.935E-02	0.486

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
TE123M	-6.771E-02		2.002E-01	2.926E-01	2.770E-02	-0.231
SB-124	-5.296E-02		2.232E-01	2.706E-01	2.700E-02	-0.196
I-125	-2.771E+00		2.683E+00	4.332E+00	4.070E-01	-0.640
SB-125	5.956E-01	+	5.714E-01	7.090E-01	7.683E-02	0.840
SB-126	2.159E+00	+	1.679E+00	2.051E+00	1.902E-01	1.053
SB-127	8.158E+00		6.262E+01	1.074E+02	9.966E+00	0.076
I-129	-1.022E-01		2.396E-01	3.918E-01	4.303E-02	-0.261
I-131	-2.742E-01		1.638E+00	2.831E+00	4.734E-01	-0.097
BA-133	1.298E-01		1.930E-01	3.023E-01	6.352E-02	0.429
CS-134	3.014E-01		1.697E-01	2.192E-01	2.186E-02	1.375
CS-135	5.291E+00		1.722E+00	1.361E+00	3.883E-01	3.887
CS-136	1.469E-01		8.532E-01	1.295E+00	1.144E-01	0.113
CS-137	4.824E-02		1.451E-01	2.250E-01	2.088E-02	0.214
LA-138	-1.388E-02		2.113E-01	3.513E-01	3.315E-02	-0.040
CE-139	1.435E-01		1.872E-01	2.992E-01	2.731E-02	0.479
BA-140	6.837E-01		2.410E+00	3.733E+00	1.257E+00	0.183
LA-140	2.525E+00		8.692E-01	1.415E+00	1.332E-01	1.784
CE-141	5.619E-01		5.728E-01	8.253E-01	2.054E-01	0.681
CE-144	1.539E-01		1.212E+00	1.941E+00	2.061E-01	0.079
PM-144	3.670E-02		1.269E-01	1.963E-01	1.824E-02	0.187
PM-145	-1.512E-01		5.641E-01	9.081E-01	5.917E-01	-0.167
PM-146	6.294E-01	+	3.855E-01	4.884E-01	5.237E-02	1.289
ND-147	1.003E+01		7.141E+00	9.206E+00	9.686E-01	1.089
EU-152	1.368E+01	+	2.144E+00	2.673E+00	3.089E-01	5.117
GD-153	-5.603E-01		5.462E-01	8.658E-01	8.813E-02	-0.647
EU-154	-5.677E-01		4.409E-01	6.139E-01	5.486E-02	-0.925
EU-155	9.540E+00	+	1.141E+00	8.459E-01	7.989E-02	11.277
EU-156	-4.407E+00		5.136E+00	7.435E+00	1.712E+00	-0.593
HO-166M	-1.163E-01		2.894E-01	3.448E-01	3.199E-02	-0.337
HF-172	-7.485E-01		1.077E+00	1.710E+00	1.871E-01	-0.438
LU-172	2.079E+00		5.143E+00	7.856E+00	6.649E-01	0.265
LU-173	4.545E+00		1.494E+00	1.093E+00	3.217E-01	4.158
HF-175	-2.944E-01		2.139E-01	3.125E-01	6.548E-02	-0.942
LU-176	-5.127E-02		1.285E-01	1.992E-01	5.427E-02	-0.257
TA-182	4.315E+01	+	4.225E+00	2.686E+00	2.251E-01	16.066
IR-192	4.677E-02		4.026E-01	5.011E-01	5.369E-02	0.093
HG-203	9.370E-02		2.717E-01	3.927E-01	1.225E-01	0.239
BI-207	-4.299E-03		1.158E-01	1.897E-01	1.948E-02	-0.023
TL-208	5.281E-01		4.156E-01	6.560E-01	6.663E-02	0.805
BI-210M	2.138E-02		3.394E-01	4.300E-01	1.165E-01	0.050
BI-212	1.778E-01		1.057E+00	1.626E+00	1.507E-01	0.109
PB-212	1.745E+00		4.881E-01	4.930E-01	1.086E-01	3.539
RA-225	-3.402E-01		1.666E+00	2.514E+00	2.166E-01	-0.135
TH-227	7.294E+00	+	2.069E+00	1.920E+00	4.125E-01	3.799
AC-228	4.616E-01		4.974E-01	8.565E-01	7.458E-02	0.539
TH-230	1.062E+02	+	3.918E+01	6.617E+01	5.132E+00	1.604
PA-231	1.583E+01		7.216E+00	8.593E+00	2.395E+00	1.843
TH-231	5.678E-01		1.081E+00	1.786E+00	2.303E-01	0.318

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/gram)	K.L. Ided	Act error	MDA (pCi/gram)	MDA error	Act/MDA
PA-233	6.527E-03		6.614E-01	1.038E+00	3.486E-01	0.006
PA-234	3.697E-01		5.921E-01	9.507E-01	1.019E-01	0.389
U-235	2.755E+00	+	1.602E+00	2.017E+00	3.696E-01	1.366
AM-241	1.197E+00		4.764E-01	6.326E-01	4.530E-02	1.893
AM-243	1.167E+01		1.122E+00	5.520E-01	4.602E-02	21.147
CM-243	4.880E-01		9.751E-01	1.404E+00	4.316E-01	0.348

Total number of lines in spectrum 104
Number of unidentified lines 68
Number of lines tentatively identified by NID 36 34.62%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.725E+01	1.725E+01	0.326E+01	18.88	
PB-210	22.26Y	1.00	5.173E+01	5.186E+01	0.580E+01	11.17	
PB-211	3.28E+04Y	1.00	8.106E+00	8.106E+00	3.649E+00	45.01	
BI-214	1602.00Y	1.00	8.299E+01	8.299E+01	0.447E+01	5.38	
PB-214	1602.00Y	1.00	8.275E+01	8.275E+01	1.355E+01	16.37	
RN-219	3.28E+04Y	1.00	5.427E+00	5.427E+00	2.344E+00	43.19	
RA-223	3.28E+04Y	1.00	4.173E+00	4.173E+00	3.313E+00	79.40	
RA-224	1.41E+10Y	1.00	1.619E+02	1.619E+02	0.372E+02	23.01	
RA-226	1602.00Y	1.00	1.441E+02	1.441E+02	2.644E+02	183.46	
PA-234M	4.47E+09Y	1.00	4.703E+01	4.703E+01	2.425E+01	51.56	
TH-234	4.47E+09Y	1.00	1.375E+01	1.375E+01	0.519E+01	37.75	
Total Activity :			6.192E+02	6.193E+02			

Nuclide Type : FISSION

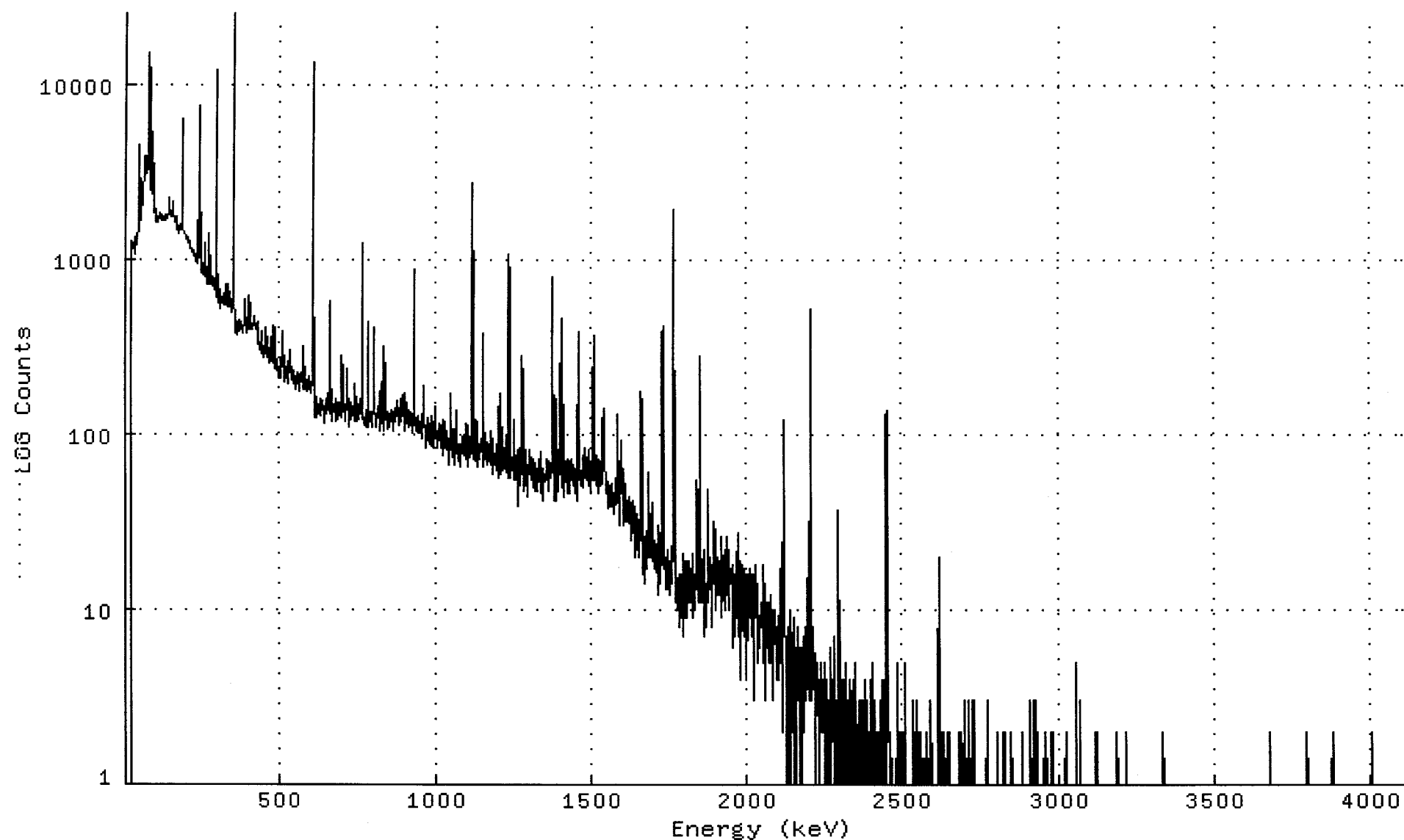
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/gram	Wtd Mean Decay Corr pCi/gram	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CD-109	464.00D	1.05	7.840E+01	8.196E+01	1.103E+01	13.46	
SN-126	1.00E+05Y	1.00	7.880E+00	7.880E+00	0.950E+00	12.05	
NP-237	2.14E+06Y	1.00	2.313E+01	2.313E+01	0.277E+01	11.97	
Total Activity :			1.094E+02	1.130E+02			

Grand Total Activity : 7.286E+02 7.323E+02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301314_GE1_GAS1202_190147.CNF;1
Title :
Sample Title: MQZ-66-130303
Start Time: 1-APR-2013 17:51: Sample Time: 3-MAR-2013 00:00: Energy Offset: -2.35223E-01
Real Time : 0 01:00:22.85 Sample ID : 1303013-14 Energy Slope : 1.00007E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301314_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	1	821	1240	1145	1138	1177	1150
25:	1132	1157	1155	1235	1062	1142	1090	1327
33:	1190	1173	1178	1264	1336	1265	1280	1378
41:	1408	1524	1577	1582	1755	3219	4447	1648
49:	1707	2260	2047	1977	2807	2464	2038	1990
57:	2151	2350	2563	2815	2958	2922	3806	3823
65:	3050	3018	3309	3827	3131	3047	3091	3211
73:	3242	4437	11411	5648	14716	10014	3279	3383
81:	3366	2863	2433	4657	2734	2344	5174	5213
89:	2400	3702	2443	2246	3430	2303	2446	1907
97:	1692	1918	1733	1683	1723	1616	1658	1672
105:	1617	1724	1677	1737	1737	1724	1765	1692
113:	1830	1719	1654	1710	1675	1660	1702	1766
121:	1663	1701	1715	1642	1705	1660	1656	1684
129:	1717	1706	1756	1736	1762	1702	1730	1734
137:	1704	1775	1780	1832	1832	1769	1842	2192
145:	2037	1731	1731	1801	1846	1870	1801	1926
153:	1860	2031	2108	1753	1706	1719	1741	1678
161:	1583	1617	1678	1714	1652	1584	1560	1569
169:	1454	1530	1418	1447	1403	1479	1392	1439
177:	1455	1479	1446	1511	1544	1544	1535	1472
185:	1886	6261	5071	1434	1429	1400	1413	1410
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265:	727	734	754	726	1110	1374	1169	1085
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3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	0	0	0	0	1
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	1	0	1	0	0

3313:	0	0	1	0	0	0	0	1
3321:	0	0	0	0	0	0	0	0
3329:	1	1	2	1	0	0	0	0
3337:	0	0	0	1	1	0	1	1
3345:	0	0	0	0	0	0	0	0
3353:	0	0	0	0	0	0	1	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	1	0	0
3385:	0	0	0	0	0	0	1	0
3393:	0	0	0	0	0	0	1	0
3401:	1	0	0	1	1	0	0	0
3409:	1	0	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	1	0	0	0
3441:	0	0	0	1	0	0	0	0
3449:	1	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	1	1	0	0	0	0	0	0
3473:	0	0	1	0	0	1	0	0
3481:	0	1	0	0	0	0	1	0
3489:	0	0	0	0	0	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	1	0	0	0	1	0
3513:	0	0	0	0	0	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	1	0	0	0	0	1	0
3537:	0	0	0	1	0	1	0	0
3545:	0	0	0	0	0	1	0	0
3553:	1	0	0	0	0	0	0	1
3561:	0	0	0	0	0	0	1	0
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	0	0	0	0	0
3585:	0	1	0	0	1	1	0	0
3593:	1	1	0	0	0	0	0	0
3601:	0	0	0	1	0	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	1	0	0	1	0	0	0	1
3625:	0	0	0	0	0	0	1	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	1	0	0	0	0	0
3649:	0	0	0	0	0	0	0	0
3657:	0	0	0	0	0	0	0	1
3665:	0	0	0	0	0	0	2	0
3673:	0	0	1	0	0	1	1	0
3681:	0	0	0	0	0	0	0	0
3689:	1	0	0	1	0	0	0	0
3697:	0	0	0	0	0	0	0	0
3705:	0	0	0	0	1	0	0	0
3713:	0	0	0	0	0	0	0	0
3721:	0	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	0
3737:	0	0	0	1	0	0	0	0
3745:	0	0	1	0	0	0	0	0
3753:	0	0	0	0	0	0	0	1
3761:	0	0	0	0	1	0	0	0
3769:	0	0	1	0	0	0	0	0
3777:	0	0	0	0	0	0	0	1
3785:	0	0	0	1	0	0	0	2

3793:	0	0	0	0	0	0	0	1
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	0	0	1	0	0	1
3825:	0	0	0	0	0	0	1	0
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	1	0
3857:	0	1	0	0	0	0	0	0
3865:	0	1	0	0	0	0	0	2
3873:	0	0	0	0	0	0	1	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	0	0	0	0	1	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	1	1	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	0	0	0	0
3945:	0	0	0	0	0	0	1	0
3953:	1	0	0	0	0	1	0	0
3961:	0	0	1	0	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	1	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	2	0	1
4001:	0	0	1	0	0	0	0	0
4009:	0	0	0	0	1	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	1	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	1	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	1	0	0	0

Sample ID : 1303013-15

Acquisition date : 2-APR-2013 06:41:19

VAX/VMS Peak Search Report Generated 2-APR-2013 07:41:38.83

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Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301315_GE2_GAS1202_190149.
 Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
 Client ID : MQZ-BKGD-E-130303
 Deposition Date :
 Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 2-APR-2013 06:41:19.
 Sample ID : 1303013-15 Sample Quantity : 5.58260E+02 GRAM
 Sample type : SOLID Sample Geometry : 0
 Detector name : GE2 Detector Geometry: GAS-1202
 Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.03 0.0%
 Start channel : 5 End channel : 4096
 Sensitivity : 2.50000 Gaussian : 15.00000
 Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	31.71	136	728	3.51	31.83	29	7	68.7		
2	72.17	54	264	1.63	72.28	71	11	81.2	4.63E+01	
2	75.17*	292	411	1.63	75.28	71	11	26.7		AM-243
0	93.17	102	445	1.44	93.29	91	6	70.2		
0	104.95	57	361	1.89	105.06	102	7	113.1		
0	185.52*	107	385	1.52	185.63	181	9	72.0		RA-226
2	238.22*	361	139	1.89	238.33	233	14	15.8	8.29E+00	PB-212
2	241.68	164	157	1.89	241.79	233	14	33.3		RA-224
0	295.05*	190	176	1.33	295.15	292	7	28.0		PB-214
0	338.46	88	127	1.35	338.56	335	8	49.7		AC-228
0	351.45*	360	146	1.81	351.56	346	9	16.5		PB-214
0	419.00	35	127	6.02	419.11	414	10	124.7		
0	583.05*	113	75	1.72	583.15	578	8	33.3		
0	608.83*	264	87	1.50	608.93	605	9	18.2		BI-214
1	661.09*	90	37	2.07	661.19	656	15	32.1	9.27E-01	CS-137
1	665.02	21	38	2.07	665.12	656	15	116.6		
1	694.90	24	31	2.09	695.00	691	16	85.4	2.19E+00	
1	702.90	16	24	1.90	703.00	691	16	115.7		
0	747.58	30	30	5.08	747.68	744	9	73.9		
0	786.12	18	41	2.22	786.22	782	8	129.4		
0	859.87	27	28	2.74	859.96	856	8	78.6		
9	907.06	11	4	2.83	907.16	906	11	69.7	4.95E+00	
9	910.57*	83	19	2.41	910.67	906	11	31.1		AC-228
4	962.86	23	33	2.99	962.95	958	20	99.9	1.79E+00	
4	968.86*	45	28	3.00	968.95	958	20	59.3		AC-228
0	1012.38	12	19	1.17	1012.47	1010	5	124.6		
0	1072.98	21	36	2.87	1073.07	1069	10	116.9		
0	1119.50*	67	47	2.06	1119.58	1114	11	47.0		BI-214
0	1287.61	20	24	3.81	1287.69	1283	9	98.8		
3	1384.24	14	9	2.98	1384.32	1372	22	95.4	1.36E+00	
3	1390.90	12	5	2.98	1390.98	1372	22	74.2		
0	1406.93*	21	24	5.86	1407.01	1401	13	104.2		
0	1438.47	11	5	1.24	1438.55	1433	9	89.9		
0	1459.89*	573	21	2.12	1459.97	1454	12	9.0		K-40
0	1506.99	13	7	1.55	1507.07	1503	9	88.0		
0	1522.07	12	5	2.94	1522.15	1518	7	87.0		

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It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1543.97	9	5	1.11	1544.05	1539	7112.8			
0	1588.21	10	6	3.33	1588.29	1585	6102.6			
0	1728.14	14	0	2.99	1728.21	1724	8	53.5		
0	1763.42*	57	2	2.15	1763.49	1759	9	29.7		BI-214
0	1838.20	6	4	1.73	1838.27	1834	7141.4			
0	1846.42	17	6	2.18	1846.49	1842	8	69.4		
0	2101.76	12	5	4.32	2101.83	2098	9	88.9		
0	2118.10	4	2	2.48	2118.16	2113	7144.5			
0	2202.82*	13	3	4.95	2202.88	2199	8	79.7		BI-214
0	2253.11	6	0	1.98	2253.17	2250	6	81.6		
0	2613.02*	48	0	3.32	2613.07	2608	10	31.3		

Total number of lines in spectrum 47
Number of unidentified lines 20
Number of lines tentatively identified by NID 27 57.45%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.535E+01	1.535E+01	0.203E+01	13.25	
PB-212	1.41E+10Y	1.00	5.801E-01	5.801E-01	1.272E-01	21.92	
BI-214	1602.00Y	1.00	9.042E-01	9.043E-01	1.464E-01	16.19	
PB-214	1602.00Y	1.00	8.750E-01	8.750E-01	1.606E-01	18.35	
RA-224	1.41E+10Y	1.00	2.995E+00	2.995E+00	1.099E+00	36.70	
RA-226	1602.00Y	1.00	2.038E+00	2.038E+00	4.014E+00	196.89	
AC-228	1.41E+10Y	1.00	6.164E-01	6.164E-01	1.548E-01	25.12	
Total Activity :			2.336E+01	2.336E+01			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.17Y	1.00	1.644E-01	1.647E-01	0.554E-01	33.65	
Total Activity :			1.644E-01	1.647E-01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-243	7380.00Y	1.00	2.405E-01	2.405E-01	0.681E-01	28.31	
Total Activity :			2.405E-01	2.405E-01			

Grand Total Activity : 2.376E+01 2.377E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.81	10.67*	4.705E-01	1.535E+01	1.535E+01	13.25	OK

Final Mean for 1 Valid Peaks = 1.535E+01 +/- 2.035E+00 (13.25%)

PB-212	238.63	44.60*	1.874E+00	5.801E-01	5.801E-01	21.92	OK
	300.09	3.41	1.612E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 5.801E-01 +/- 1.272E-01 (21.92%)

BI-214	609.31	46.30*	9.260E-01	8.269E-01	8.269E-01	20.90	OK
	1120.29	15.10	5.678E-01	1.051E+00	1.051E+00	48.26	OK
	1764.49	15.80	4.183E-01	1.159E+00	1.159E+00	31.31	OK
	2204.22	4.98	3.725E-01	9.551E-01	9.551E-01	80.48	OK

Final Mean for 4 Valid Peaks = 9.043E-01 +/- 1.464E-01 (16.19%)

PB-214	295.21	19.19	1.631E+00	8.153E-01	8.153E-01	33.64	OK
	351.92	37.19*	1.436E+00	9.061E-01	9.062E-01	21.86	OK

Final Mean for 2 Valid Peaks = 8.750E-01 +/- 1.606E-01 (18.35%)

RA-224	240.98	3.95*	1.863E+00	2.995E+00	2.995E+00	36.70	OK
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Final Mean for 1 Valid Peaks = 2.995E+00 +/- 1.099E+00 (36.70%)

RA-226	186.21	3.28*	2.147E+00	2.038E+00	2.038E+00	196.89	OK
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Final Mean for 1 Valid Peaks = 2.038E+00 +/- 4.014E+00 (196.89%)

AC-228	338.32	11.40	1.479E+00	6.994E-01	6.994E-01	52.06	OK
	911.07	27.70*	6.664E-01	6.054E-01	6.054E-01	32.51	OK
	969.11	16.60	6.347E-01	5.753E-01	5.753E-01	60.09	OK

Final Mean for 3 Valid Peaks = 6.164E-01 +/- 1.548E-01 (25.12%)

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
CS-137	661.65	85.12*	8.649E-01	1.644E-01	1.647E-01	33.65	OK

Final Mean for 1 Valid Peaks = 1.647E-01 +/- 5.541E-02 (33.65%)

Sample ID : 1303013-15

Acquisition date : 2-APR-2013 06:41:19

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
AM-243	74.67	66.00*	2.478E+00	2.405E-01	2.405E-01	28.31	OK

Final Mean for 1 Valid Peaks = 2.405E-01+/- 6.809E-02 (28.31%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.535E+01	2.035E+00	4.920E-01	4.345E-02	31.202
CS-137	1.647E-01	5.541E-02	5.841E-02	5.326E-03	2.819
PB-212	5.801E-01	1.272E-01	8.768E-02	1.290E-02	6.616
BI-214	9.043E-01	1.464E-01	1.266E-01	1.210E-02	7.142
PB-214	8.750E-01	1.606E-01	1.188E-01	1.635E-02	7.367
RA-224	2.995E+00	1.099E+00	9.967E-01	1.490E-01	3.004
RA-226	2.038E+00	4.014E+00	1.256E+00	2.301E+00	1.623
AC-228	6.164E-01	1.548E-01	2.322E-01	1.979E-02	2.654
AM-243	2.405E-01	6.809E-02	7.408E-02	6.343E-03	3.247

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.276E-02		3.684E-01	6.661E-01	6.655E-02	-0.049
NA-22	-2.771E-02		3.744E-02	5.980E-02	5.434E-03	-0.463
AL-26	7.652E-03		2.474E-02	5.354E-02	4.911E-03	0.143
TI-44	-9.058E-03		3.466E-02	5.367E-02	4.310E-03	-0.169
SC-46	1.003E-02		4.616E-02	8.450E-02	7.166E-03	0.119
V-48	-2.380E-02		1.295E-01	2.281E-01	2.065E-02	-0.104
CR-51	3.769E-02		5.490E-01	9.116E-01	1.519E-01	0.041
MN-54	-7.064E-03		3.444E-02	6.086E-02	5.335E-03	-0.116
CO-56	2.147E-02		4.606E-02	8.624E-02	7.513E-03	0.249
CO-57	-4.406E-03		3.028E-02	5.045E-02	6.171E-03	-0.087
CO-58	-1.227E-02		3.894E-02	6.843E-02	6.081E-03	-0.179
FE-59	-2.239E-02		1.160E-01	2.016E-01	2.111E-02	-0.111
CO-60	-1.374E-02		4.395E-02	7.749E-02	8.013E-03	-0.177
ZN-65	5.557E-02		9.586E-02	1.649E-01	1.644E-02	0.337
SE-75	-3.572E-02		5.088E-02	7.931E-02	1.387E-02	-0.450
RB-82	-8.306E-01		7.059E-01	9.500E-01	8.529E-02	-0.874
RB-83	4.317E-02		7.182E-02	1.366E-01	2.241E-02	0.316
KR-85	-9.046E+00		8.017E+00	1.320E+01	1.316E+00	-0.685
SR-85	-5.438E-02		4.820E-02	7.936E-02	7.913E-03	-0.685
Y-88	2.281E-02		3.259E-02	7.017E-02	6.457E-03	0.325
NB-93M	-1.784E+01		7.549E+00	3.687E+00	1.456E+00	-4.839
NB-94	4.981E-03		3.447E-02	6.289E-02	5.399E-03	0.079
NB-95	5.600E-02		6.937E-02	1.313E-01	1.183E-02	0.427
ZR-95	-3.076E-03		8.976E-02	1.445E-01	1.425E-02	-0.021
RU-103	-1.022E-02		4.962E-02	8.887E-02	1.336E-02	-0.115
RU-106	-1.273E-01		3.269E-01	5.702E-01	7.934E-02	-0.223
AG-108M	4.478E-03		3.866E-02	6.993E-02	6.353E-03	0.064
CD-109	1.014E+00		9.406E-01	1.514E+00	1.729E-01	0.670
AG-110M	4.056E-02		4.046E-02	7.246E-02	6.623E-03	0.560
SN-113	-1.342E-02		4.987E-02	8.888E-02	8.871E-03	-0.151
TE123M	-9.408E-03		3.402E-02	5.593E-02	5.047E-03	-0.168
SB-124	1.141E-02		4.581E-02	7.677E-02	7.371E-03	0.149
I-125	2.168E+00		1.069E+00	1.804E+00	2.015E-01	1.201
SB-125	8.328E-02		9.839E-02	1.730E-01	1.738E-02	0.481

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-126	-6.510E-02		3.422E-01	6.040E-01	5.489E-02	-0.108
SN-126	6.502E-02		8.884E-02	1.419E-01	1.380E-02	0.458
SB-127	2.958E-01		1.990E+01	3.456E+01	3.148E+00	0.009
I-129	-6.544E-02		1.289E-01	2.007E-01	2.776E-02	-0.326
I-131	-4.190E-02		4.125E-01	7.465E-01	9.396E-02	-0.056
BA-133	-4.738E-03		4.918E-02	7.358E-02	1.230E-02	-0.064
CS-134	3.576E-02		3.293E-02	5.990E-02	5.754E-03	0.597
CS-135	1.415E-01		1.577E-01	2.732E-01	4.878E-02	0.518
CS-136	1.357E-01		2.181E-01	4.203E-01	4.095E-02	0.323
LA-138	-5.620E-03		4.736E-02	7.622E-02	6.500E-03	-0.074
CE-139	-7.502E-03		3.425E-02	5.647E-02	4.737E-03	-0.133
BA-140	-4.194E-01		5.918E-01	9.806E-01	3.285E-01	-0.428
LA-140	-4.133E-02		1.369E-01	2.282E-01	2.024E-02	-0.181
CE-141	5.553E-02		1.006E-01	1.733E-01	4.352E-02	0.321
CE-144	4.398E-03		2.466E-01	4.129E-01	4.646E-02	0.011
PM-144	1.676E-02		3.236E-02	6.125E-02	5.584E-03	0.274
PM-145	3.153E-01		2.886E-01	3.445E-01	2.253E-01	0.915
PM-146	-2.607E-02		6.494E-02	1.146E-01	1.142E-02	-0.227
ND-147	1.622E-01		1.338E+00	2.463E+00	2.447E-01	0.066
EU-152	3.967E-01	+	4.158E-01	5.488E-01	5.920E-02	0.723
GD-153	-7.536E-02		1.290E-01	1.939E-01	2.082E-02	-0.389
EU-154	-7.481E-02		1.040E-01	1.668E-01	1.516E-02	-0.448
EU-155	-5.132E-02		1.106E-01	1.683E-01	1.619E-02	-0.305
EU-156	-5.799E-01		1.100E+00	1.867E+00	4.282E-01	-0.311
HO-166M	2.319E-02		5.425E-02	9.894E-02	9.000E-03	0.234
HF-172	-5.075E-02		2.209E-01	3.661E-01	4.359E-02	-0.139
LU-172	1.098E+00		1.491E+00	2.851E+00	2.799E-01	0.385
LU-173	-9.497E-02		1.301E-01	2.018E-01	3.690E-02	-0.471
HF-175	1.074E-02		4.670E-02	6.421E-02	9.328E-03	0.167
LU-176	2.078E-02		2.843E-02	4.891E-02	8.499E-03	0.425
TA-182	4.360E-01		2.077E-01	3.896E-01	3.896E-02	1.119
IR-192	-3.977E-02		7.626E-02	1.329E-01	1.327E-02	-0.299
HG-203	-3.736E-02		5.343E-02	8.294E-02	1.593E-02	-0.450
BI-207	-1.534E-02		2.945E-02	5.143E-02	5.035E-03	-0.298
TL-208	5.215E-01	+	1.823E-01	2.971E-01	2.888E-02	1.755
BI-210M	-2.206E-02		5.491E-02	8.811E-02	1.512E-02	-0.250
PB-210	7.720E-01		7.783E-01	1.411E+00	1.226E-01	0.547
PB-211	9.346E-02		9.109E-01	1.664E+00	1.632E-01	0.056
BI-212	2.131E-01		3.080E-01	5.797E-01	5.263E-02	0.368
RN-219	-1.505E-01		4.124E-01	7.303E-01	7.153E-02	-0.206
RA-223	-6.669E-01		7.108E-01	1.069E+00	1.724E-01	-0.624
RA-225	-8.923E-01		4.822E-01	7.487E-01	7.397E-02	-1.192
TH-227	1.255E+00		3.282E-01	5.374E-01	7.763E-02	2.335
TH-230	-2.248E+00		8.843E+00	1.370E+01	1.098E+00	-0.164
PA-231	-2.186E-01		1.290E+00	1.922E+00	3.394E-01	-0.114
TH-231	3.998E-01		6.309E-01	1.022E+00	1.757E-01	0.391
PA-233	-1.273E-01		1.577E-01	2.373E-01	6.365E-02	-0.536
PA-234	2.022E-02		1.224E-01	2.063E-01	2.362E-02	0.098

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234M	2.089E+00		3.358E+00	6.680E+00	6.129E-01	0.313
TH-234	2.413E-02		8.643E-01	1.503E+00	1.159E-01	0.016
U-235	1.167E-01		2.408E-01	4.159E-01	7.669E-02	0.280
NP-237	-1.243E-01		2.682E-01	4.079E-01	3.926E-02	-0.305
AM-241	-1.286E-01		9.260E-02	1.494E-01	1.117E-02	-0.861
CM-243	1.897E-01		1.779E-01	3.102E-01	5.867E-02	0.612

Total number of lines in spectrum 47
Number of unidentified lines 20
Number of lines tentatively identified by NID 27 57.45%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.535E+01	1.535E+01	0.203E+01	13.25	
PB-212	1.41E+10Y	1.00	5.801E-01	5.801E-01	1.272E-01	21.92	
BI-214	1602.00Y	1.00	9.042E-01	9.043E-01	1.464E-01	16.19	
PB-214	1602.00Y	1.00	8.750E-01	8.750E-01	1.606E-01	18.35	
RA-224	1.41E+10Y	1.00	2.995E+00	2.995E+00	1.099E+00	36.70	
RA-226	1602.00Y	1.00	2.038E+00	2.038E+00	4.014E+00	196.89	
AC-228	1.41E+10Y	1.00	6.164E-01	6.164E-01	1.548E-01	25.12	
Total Activity :			2.336E+01	2.336E+01			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.17Y	1.00	1.644E-01	1.647E-01	0.554E-01	33.65	
Total Activity :			1.644E-01	1.647E-01			

Nuclide Type : ACTIVATION

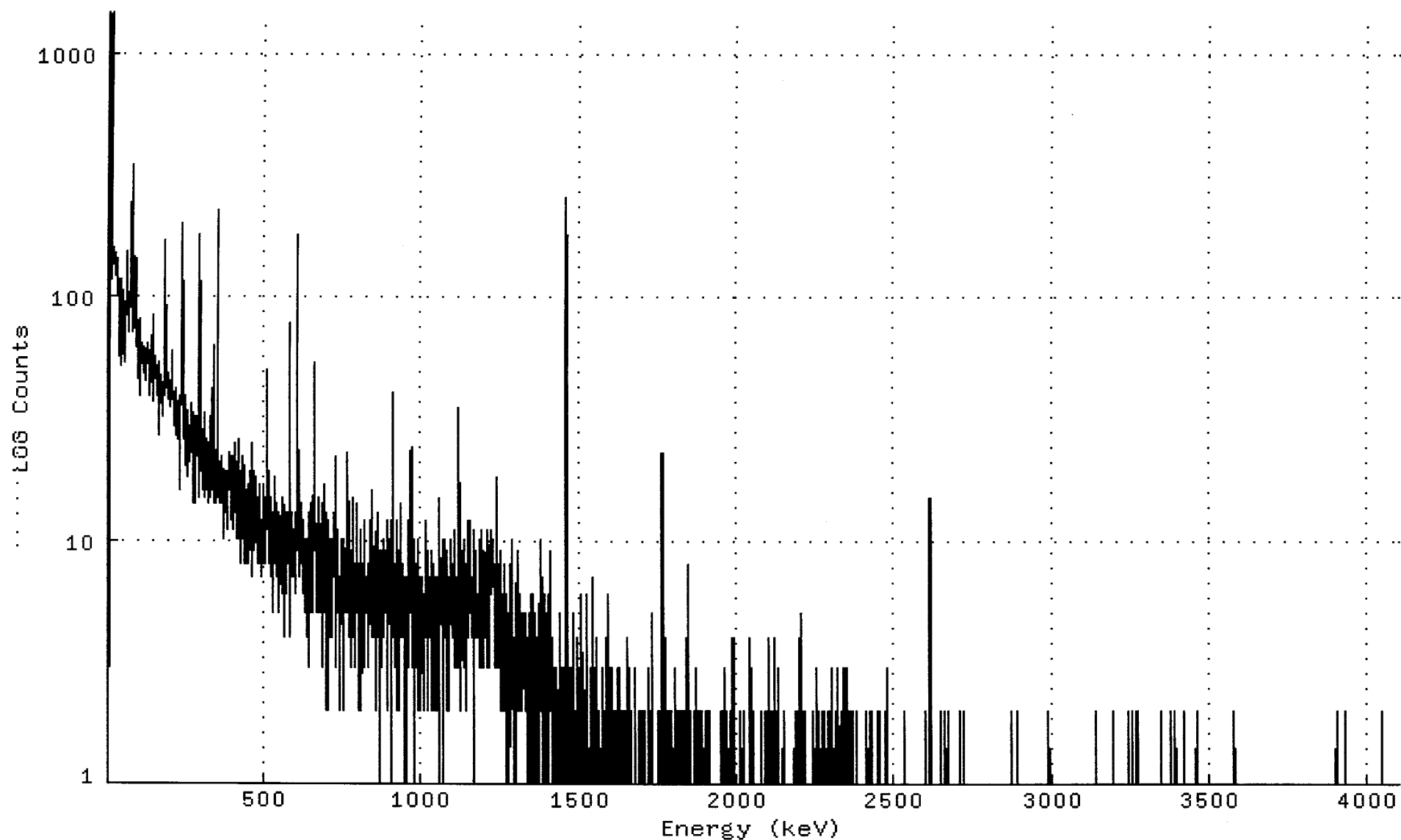
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-243	7380.00Y	1.00	2.405E-01	2.405E-01	0.681E-01	28.31	
Total Activity :			2.405E-01	2.405E-01			

Grand Total Activity : 2.376E+01 2.377E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301315_GE2_GAS1202_190149.CNF;1
Title :
Sample Title: MQZ-BKGD-E-130303
Start Time: 2-APR-2013 06:41: Sample Time: 3-MAR-2013 00:00: Energy Offset: -1.16012E-01
Real Time : 0 01:00:01.03 Sample ID : 1303013-15 Energy Slope : 1.00003E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100:[GAMMA.SCUSR.ARCHIVE] SMP_130301315_GE2_GAS1202_1901

Channel

1:	0	1	1	5	3	124	841	1439
9:	1375	1420	556	1485	724	117	142	172
17:	144	144	158	158	135	153	130	148
25:	146	144	151	121	121	132	136	143
33:	134	105	93	92	118	65	65	59
41:	53	52	57	57	62	118	94	66
49:	68	57	73	61	94	68	54	91
57:	67	85	104	93	83	94	152	116
65:	75	94	90	71	104	92	89	114
73:	96	149	243	158	345	123	79	77
81:	71	73	80	110	77	74	145	105
89:	86	123	85	108	142	88	72	52
97:	62	52	79	60	53	39	62	60
105:	70	81	51	55	57	57	53	55
113:	64	57	48	62	51	61	61	53
121:	58	45	61	56	48	55	58	56
129:	64	57	59	60	56	54	59	39
137:	58	44	66	53	50	47	57	84
145:	48	56	55	37	41	55	51	56
153:	47	51	53	39	52	43	39	40
161:	50	40	54	54	27	39	48	40
169:	36	42	47	46	47	41	34	36
177:	32	43	34	44	40	49	43	42
185:	107	169	50	43	44	43	42	56
193:	41	47	38	42	39	39	35	44
201:	38	35	45	39	43	38	41	47
209:	60	45	31	40	38	30	29	36
217:	42	29	27	27	35	37	34	34
225:	26	35	35	35	39	30	31	16
233:	26	33	37	39	37	200	200	60
241:	87	114	38	26	32	26	29	30
249:	39	20	20	27	29	23	33	18
257:	24	34	22	29	25	21	21	24
265:	24	26	23	24	36	31	27	26
273:	14	24	30	24	33	28	21	23
281:	14	21	32	25	22	32	25	22
289:	27	33	27	27	15	48	178	75
297:	21	19	31	39	36	16	24	18
305:	22	20	24	33	28	21	21	19
313:	15	26	17	25	17	21	16	25
321:	16	20	15	20	14	24	25	32
329:	15	22	23	21	19	21	16	19
337:	28	63	29	23	23	14	14	16
345:	14	16	15	18	20	27	157	225
353:	44	15	21	20	14	18	21	20
361:	14	18	17	14	17	22	17	21
369:	18	14	12	16	12	10	16	16
377:	19	14	14	13	19	15	11	15
385:	15	18	20	23	16	22	21	18
393:	17	12	15	22	19	19	11	13
401:	22	16	16	18	22	13	17	19
409:	25	14	15	16	15	12	10	17
417:	26	17	22	10	16	23	9	15
425:	8	19	19	12	22	11	20	13

433:	10	11	12	16	18	8	20	12
441:	16	8	13	12	16	14	11	13
449:	17	8	16	11	11	9	17	12
457:	13	19	12	14	21	15	25	19
465:	7	14	12	19	9	11	13	13
473:	18	10	13	13	10	9	12	15
481:	8	11	13	8	17	13	13	8
489:	8	11	7	12	11	9	11	8
497:	13	13	9	9	17	11	9	15
505:	12	8	12	12	23	50	46	36
513:	11	13	9	8	9	19	9	15
521:	9	9	7	7	10	10	6	13
529:	8	5	12	11	11	18	10	8
537:	13	10	7	10	14	11	10	13
545:	9	11	6	13	5	13	12	7
553:	12	8	9	7	6	6	8	8
561:	7	15	13	10	12	12	4	5
569:	12	9	13	12	6	9	9	11
577:	12	8	12	13	11	34	78	41
585:	4	13	8	7	7	10	11	13
593:	8	7	9	11	10	11	6	7
601:	7	13	10	8	12	9	12	79
609:	178	49	11	11	7	12	16	12
617:	14	9	13	9	8	8	8	11
625:	9	6	12	10	8	8	10	5
633:	9	8	9	6	10	4	7	7
641:	8	13	10	9	4	3	7	14
649:	8	5	7	6	9	9	6	6
657:	5	10	11	21	54	38	13	9
665:	17	8	7	5	11	6	7	5
673:	6	11	9	7	15	9	8	10
681:	5	7	5	7	3	14	6	11
689:	7	7	5	10	9	8	17	10
697:	7	2	8	3	10	8	12	4
705:	11	2	5	4	8	10	10	5
713:	5	5	8	10	6	4	10	7
721:	9	9	13	8	9	16	22	9
729:	6	6	3	13	7	5	6	9
737:	6	11	3	7	5	6	4	2
745:	10	7	10	9	9	6	5	2
753:	5	10	10	6	7	5	7	9
761:	6	7	12	5	6	9	16	23
769:	9	4	12	14	8	6	4	8
777:	9	7	3	5	9	4	4	10
785:	15	12	5	4	5	3	8	5
793:	8	7	14	8	5	8	8	2
801:	7	5	5	8	6	11	3	6
809:	8	2	4	6	4	3	8	3
817:	3	9	3	4	10	12	7	7
825:	7	7	5	6	7	6	3	5
833:	4	6	8	6	6	6	6	12
841:	5	4	11	16	6	6	11	8
849:	4	7	8	5	6	3	2	4
857:	2	7	9	13	9	7	4	4
865:	11	5	4	1	5	9	9	7
873:	4	9	8	3	7	4	7	7
881:	8	7	10	8	5	5	5	7
889:	9	9	2	12	8	4	4	5
897:	6	10	7	9	5	9	10	7
905:	3	1	12	4	9	40	35	21

913:	10	8	5	4	3	8	8	6
921:	7	2	12	2	6	10	3	2
929:	4	3	9	2	14	7	4	5
937:	6	8	8	6	6	7	4	7
945:	3	5	6	1	5	7	5	7
953:	5	1	4	5	5	3	3	7
961:	4	12	8	15	9	5	8	23
969:	24	11	7	9	3	3	4	10
977:	1	4	2	6	8	6	4	4
985:	5	3	6	7	10	4	2	5
993:	6	7	2	2	5	2	4	7
1001:	5	5	4	6	3	3	3	6
1009:	2	4	5	6	12	4	5	4
1017:	7	7	6	9	8	2	6	5
1025:	5	5	7	4	7	4	8	2
1033:	6	9	3	4	8	4	2	5
1041:	5	5	2	7	6	7	4	7
1049:	7	3	5	4	2	4	15	9
1057:	1	5	4	5	5	8	5	5
1065:	7	10	5	5	1	8	6	10
1073:	5	4	7	4	7	4	4	4
1081:	2	9	3	3	7	2	4	6
1089:	4	5	10	7	5	7	7	5
1097:	8	4	5	5	7	5	9	6
1105:	3	6	11	4	5	4	7	3
1113:	3	3	7	3	4	11	35	29
1121:	10	6	8	2	9	2	5	7
1129:	9	5	6	5	5	6	10	3
1137:	4	6	3	2	4	7	8	7
1145:	5	8	7	4	12	8	5	7
1153:	12	10	8	6	7	4	7	5
1161:	4	7	6	0	11	4	6	4
1169:	6	4	4	9	7	6	6	4
1177:	4	6	6	6	3	10	6	10
1185:	5	8	4	7	11	3	9	8
1193:	5	3	5	9	5	3	7	5
1201:	4	6	6	7	8	10	8	11
1209:	7	6	3	5	7	3	5	6
1217:	9	10	7	11	6	6	9	7
1225:	10	9	8	9	8	5	5	5
1233:	8	3	4	9	18	14	6	3
1241:	4	5	8	3	3	8	4	3
1249:	2	2	9	3	3	5	6	2
1257:	2	5	2	2	8	5	3	2
1265:	5	1	5	4	6	2	4	5
1273:	0	3	5	2	2	1	2	4
1281:	8	4	3	3	7	7	4	10
1289:	5	4	1	3	2	3	1	4
1297:	1	2	6	5	4	5	9	4
1305:	2	4	7	4	6	2	3	2
1313:	2	5	5	4	5	3	4	2
1321:	4	4	3	4	5	3	2	3
1329:	2	4	5	4	4	0	2	3
1337:	0	1	4	3	4	2	5	1
1345:	3	3	1	1	6	2	1	2
1353:	2	6	1	1	1	5	3	3
1361:	3	3	4	3	1	4	2	0
1369:	1	2	2	0	3	1	3	10
1377:	10	3	2	2	2	3	1	7
1385:	3	3	1	1	1	2	6	3

1393:	0	2	0	5	0	1	4	1
1401:	1	1	6	3	1	7	9	7
1409:	5	2	2	2	1	4	2	2
1417:	2	0	2	3	2	1	2	3
1425:	0	1	2	2	3	2	1	1
1433:	1	1	1	2	2	2	2	5
1441:	0	0	1	3	1	3	3	3
1449:	0	2	2	2	1	2	1	1
1457:	4	38	140	254	128	31	4	1
1465:	2	2	0	3	0	1	0	1
1473:	0	2	3	1	3	1	2	3
1481:	5	2	1	2	2	1	0	1
1489:	1	2	1	0	4	4	2	2
1497:	3	2	2	1	1	0	0	2
1505:	2	1	3	6	2	2	2	1
1513:	2	2	2	0	1	1	1	1
1521:	6	2	6	0	1	2	1	1
1529:	1	0	1	1	1	1	1	3
1537:	0	1	2	0	1	2	2	7
1545:	0	0	1	1	0	1	3	0
1553:	0	1	4	0	2	1	1	0
1561:	0	1	2	1	1	1	0	1
1569:	1	1	1	3	1	1	3	1
1577:	2	0	2	1	1	1	4	1
1585:	0	3	4	3	6	0	3	2
1593:	2	0	1	1	0	3	0	0
1601:	1	0	0	0	3	1	2	1
1609:	1	2	1	1	0	2	2	1
1617:	1	0	1	3	2	2	1	3
1625:	0	3	1	2	1	2	1	1
1633:	1	0	2	0	0	2	0	1
1641:	0	2	1	1	1	1	0	2
1649:	0	2	4	0	2	0	3	2
1657:	0	0	3	3	1	2	2	1
1665:	2	1	0	0	0	0	1	0
1673:	1	3	0	0	0	0	1	0
1681:	1	0	1	0	0	1	0	1
1689:	2	1	2	1	1	2	1	1
1697:	1	2	0	0	0	0	2	1
1705:	2	1	1	1	1	1	1	1
1713:	0	0	1	3	0	0	1	0
1721:	2	2	0	0	1	0	3	3
1729:	5	2	0	0	0	1	0	1
1737:	1	0	1	0	1	1	1	1
1745:	1	0	1	1	1	0	2	0
1753:	1	1	2	1	2	1	0	2
1761:	4	4	23	23	6	3	0	0
1769:	3	1	1	0	4	0	1	1
1777:	0	0	2	1	2	2	0	1
1785:	0	0	0	0	2	1	0	2
1793:	2	1	0	1	0	0	1	1
1801:	0	3	2	1	0	1	1	1
1809:	2	0	2	2	0	0	1	0
1817:	1	0	2	0	0	0	0	0
1825:	2	1	2	1	0	0	1	0
1833:	1	0	1	0	4	3	1	0
1841:	1	0	1	2	3	7	8	2
1849:	0	2	2	0	0	1	1	1
1857:	1	0	0	0	0	1	0	2
1865:	2	2	2	0	0	3	1	1

1873:	0	2	0	0	0	0	0	0
1881:	1	2	1	1	0	2	0	0
1889:	2	2	0	1	1	0	0	0
1897:	1	2	1	0	1	0	0	1
1905:	2	0	0	0	2	1	0	0
1913:	2	1	1	1	1	0	0	0
1921:	1	1	0	1	0	0	0	0
1929:	1	1	0	1	1	0	0	0
1937:	1	0	0	0	0	0	0	0
1945:	0	1	2	2	1	0	1	0
1953:	2	1	2	2	2	1	3	0
1961:	0	1	0	0	1	2	0	0
1969:	0	1	0	1	0	0	1	2
1977:	0	1	1	1	1	3	0	0
1985:	0	4	4	0	4	1	2	1
1993:	0	0	1	0	0	1	1	1
2001:	1	0	1	1	0	0	1	1
2009:	1	0	2	1	0	0	1	0
2017:	0	0	2	1	0	0	0	0
2025:	0	0	0	0	1	0	0	0
2033:	0	1	1	1	1	4	1	1
2041:	0	1	0	0	2	0	3	0
2049:	0	0	2	0	0	1	1	0
2057:	0	0	1	0	1	1	1	1
2065:	0	0	1	0	0	0	1	1
2073:	0	2	1	1	1	0	0	1
2081:	0	0	0	0	1	2	1	2
2089:	2	0	1	0	2	0	0	1
2097:	1	0	2	3	3	2	4	1
2105:	1	0	1	1	0	0	1	1
2113:	0	0	0	4	0	2	0	0
2121:	0	2	0	0	0	0	0	1
2129:	0	2	0	3	1	0	0	1
2137:	1	0	1	1	0	1	0	0
2145:	1	2	1	2	0	0	0	1
2153:	0	1	0	1	1	0	0	0
2161:	0	1	1	1	0	1	1	1
2169:	0	1	0	0	1	1	0	1
2177:	1	1	1	0	0	2	1	2
2185:	0	1	1	0	2	2	0	0
2193:	0	0	1	0	0	2	0	4
2201:	2	2	5	4	2	0	0	1
2209:	2	1	0	1	2	0	0	0
2217:	1	0	1	0	0	0	0	1
2225:	1	1	0	0	0	1	0	0
2233:	0	0	1	0	0	0	0	1
2241:	1	2	1	0	0	0	0	1
2249:	0	0	0	1	3	2	0	0
2257:	0	0	2	2	1	0	0	1
2265:	1	1	0	2	0	2	0	0
2273:	0	1	0	0	0	2	0	0
2281:	1	0	0	1	1	2	0	0
2289:	0	1	1	2	2	0	2	1
2297:	2	0	1	1	0	3	0	0
2305:	0	0	0	1	1	2	0	0
2313:	1	0	1	0	0	0	0	1
2321:	3	0	1	1	0	0	1	1
2329:	0	2	1	0	0	0	1	1
2337:	3	0	0	0	1	0	3	0
2345:	3	1	1	3	0	0	0	0

2353:	1	0	1	1	2	1	1	0
2361:	2	1	1	1	0	0	2	1
2369:	2	0	0	1	0	1	0	0
2377:	0	0	2	0	0	0	1	0
2385:	0	0	1	0	0	0	0	0
2393:	0	0	0	0	0	0	0	0
2401:	0	0	0	0	0	1	0	0
2409:	0	1	2	1	0	0	0	0
2417:	1	0	2	1	0	0	1	0
2425:	0	2	1	1	0	0	0	0
2433:	0	0	1	1	0	0	0	0
2441:	0	0	0	2	2	1	2	2
2449:	1	1	2	1	0	0	0	1
2457:	1	0	0	0	0	0	0	1
2465:	1	0	0	1	1	0	2	0
2473:	1	3	0	2	0	1	0	1
2481:	0	0	0	0	0	0	1	0
2489:	0	1	1	0	1	0	0	1
2497:	0	1	0	1	0	1	0	0
2505:	0	0	1	0	0	0	0	0
2513:	0	1	0	0	0	0	0	0
2521:	0	0	0	0	0	0	0	1
2529:	0	1	0	2	0	1	0	0
2537:	0	0	0	1	0	0	0	0
2545:	0	0	1	0	0	1	0	0
2553:	1	0	0	0	0	0	0	0
2561:	0	1	1	0	0	0	1	1
2569:	0	0	1	0	0	0	0	0
2577:	0	0	0	0	0	0	0	0
2585:	0	0	0	0	0	1	0	1
2593:	0	0	0	0	0	2	0	0
2601:	0	0	0	1	0	0	0	0
2609:	1	0	4	15	15	14	4	3
2617:	0	0	0	0	0	0	0	0
2625:	0	0	0	0	0	0	0	0
2633:	0	0	1	0	1	0	0	0
2641:	0	0	0	0	1	2	1	0
2649:	1	1	0	0	0	0	0	0
2657:	0	2	0	1	0	0	1	0
2665:	0	0	0	2	1	0	0	1
2673:	0	0	0	0	0	0	0	0
2681:	0	0	1	0	0	1	0	0
2689:	0	0	0	0	0	0	0	0
2697:	0	0	0	0	0	1	0	0
2705:	0	0	0	2	0	0	1	0
2713:	0	0	0	0	0	0	0	2
2721:	1	1	0	1	0	0	1	0
2729:	0	1	0	0	0	0	1	0
2737:	1	0	0	0	1	1	0	0
2745:	1	0	0	0	0	0	1	0
2753:	0	0	0	0	0	0	0	0
2761:	0	0	0	1	1	0	0	0
2769:	0	0	0	0	0	0	1	0
2777:	0	0	0	0	0	0	0	0
2785:	0	0	0	0	0	0	0	0
2793:	0	0	0	0	0	0	0	0
2801:	0	1	1	1	0	0	0	0
2809:	0	0	0	0	1	0	1	0
2817:	0	0	1	0	0	0	0	1
2825:	0	0	0	0	0	0	0	0

2833:	0	1	1	1	1	0	1	0
2841:	0	0	0	0	0	0	0	0
2849:	1	1	0	1	0	1	1	0
2857:	0	0	0	0	0	0	0	0
2865:	0	0	0	1	2	1	1	0
2873:	0	0	1	0	0	1	0	1
2881:	0	0	0	0	0	0	0	1
2889:	0	2	0	0	0	0	0	0
2897:	0	1	0	0	0	0	0	0
2905:	0	0	0	0	0	0	0	0
2913:	1	0	1	0	0	1	0	0
2921:	1	0	0	0	0	0	0	0
2929:	0	0	1	0	0	0	0	0
2937:	0	1	0	0	0	0	1	1
2945:	0	0	0	0	0	1	0	0
2953:	0	0	1	0	0	0	0	0
2961:	0	0	0	1	0	0	1	1
2969:	1	0	0	0	1	1	0	0
2977:	0	0	0	0	1	0	0	0
2985:	0	0	0	2	0	0	0	1
2993:	0	0	0	0	0	0	1	0
3001:	0	0	0	0	0	1	0	0
3009:	0	0	0	1	0	0	1	1
3017:	0	1	1	0	0	0	0	0
3025:	0	0	0	0	0	0	0	0
3033:	0	0	1	0	0	0	0	1
3041:	1	0	0	0	0	1	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	1	0	1	1	0
3065:	0	0	0	0	0	0	0	1
3073:	1	0	0	0	0	0	0	0
3081:	0	0	0	0	0	1	0	0
3089:	1	0	1	0	0	0	1	0
3097:	0	0	0	0	0	0	0	0
3105:	1	0	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	0	1	1	0	0	0
3129:	1	0	0	0	0	0	0	0
3137:	2	1	0	0	1	0	1	0
3145:	0	0	0	0	0	0	0	0
3153:	0	1	0	0	0	0	0	0
3161:	0	0	0	0	0	0	1	0
3169:	0	0	1	0	0	0	0	1
3177:	0	1	0	0	1	0	0	1
3185:	0	0	0	0	0	1	0	0
3193:	0	2	0	0	0	0	0	0
3201:	0	1	0	0	1	0	0	0
3209:	1	1	0	0	0	0	0	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	1	0	1	0
3233:	0	0	0	0	1	1	0	0
3241:	2	0	0	1	0	0	0	0
3249:	0	0	0	1	2	0	0	0
3257:	0	0	0	1	0	0	0	0
3265:	0	0	2	0	2	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	1	0	0	0	0	1
3289:	0	0	1	0	0	0	0	0
3297:	1	0	0	0	0	0	0	0
3305:	0	0	1	0	0	0	0	0

3313:	0	0	1	1	0	1	0	1
3321:	0	0	0	0	0	1	0	0
3329:	0	1	0	0	0	0	0	0
3337:	0	0	1	0	1	0	2	0
3345:	0	0	0	0	0	0	0	1
3353:	0	1	1	1	0	0	0	1
3361:	0	0	0	0	0	0	0	0
3369:	1	0	1	0	2	0	0	0
3377:	0	0	0	0	0	0	1	0
3385:	0	0	0	0	2	0	1	0
3393:	0	0	0	0	0	1	0	0
3401:	0	0	0	0	0	0	0	1
3409:	0	0	1	1	0	0	0	0
3417:	2	1	0	1	0	0	0	0
3425:	0	0	0	0	0	0	0	0
3433:	1	0	0	0	0	0	0	1
3441:	0	0	1	0	0	0	0	1
3449:	0	0	0	0	0	0	0	2
3457:	1	0	0	0	1	1	0	1
3465:	0	0	0	0	0	0	0	0
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	0	1	0	1	0
3489:	0	1	0	1	0	0	0	0
3497:	0	0	1	0	0	0	0	0
3505:	0	1	0	0	0	0	0	0
3513:	0	0	0	0	0	0	0	0
3521:	1	0	0	0	0	0	0	1
3529:	0	0	0	0	0	0	0	0
3537:	0	1	1	0	0	0	0	0
3545:	0	0	0	0	0	0	1	0
3553:	0	0	0	0	0	1	0	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	1	0	1	0	0	0
3577:	2	0	0	0	0	0	0	0
3585:	0	0	0	0	0	1	0	0
3593:	0	0	0	1	0	1	0	0
3601:	0	0	0	0	0	1	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	0	0	0	1	0
3625:	0	0	0	0	0	0	0	0
3633:	0	0	1	0	0	0	1	0
3641:	0	0	0	0	0	0	0	0
3649:	0	0	0	1	0	0	0	0
3657:	0	0	0	0	0	0	1	0
3665:	0	0	0	0	1	0	0	0
3673:	0	0	0	1	0	0	0	0
3681:	0	0	0	0	1	0	0	0
3689:	0	0	0	0	0	0	1	0
3697:	0	0	1	0	0	0	0	0
3705:	1	0	0	0	0	0	0	0
3713:	0	0	0	1	0	0	0	1
3721:	0	0	0	0	0	0	0	0
3729:	0	1	0	0	0	0	1	0
3737:	0	0	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	1
3753:	0	0	1	0	1	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	1	1	0	0	0	0	0

3793:	0	0	0	1	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	0	0	0	0	0	1
3817:	0	0	0	0	0	0	0	1
3825:	0	0	1	0	0	0	0	0
3833:	0	0	0	0	0	1	0	0
3841:	0	0	0	1	0	0	0	0
3849:	0	1	0	0	0	0	0	0
3857:	0	0	0	0	0	0	1	0
3865:	0	0	1	1	0	0	0	0
3873:	0	0	0	0	1	0	0	0
3881:	1	0	0	1	0	0	0	0
3889:	0	0	0	0	0	0	0	0
3897:	0	0	2	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	1	0	0
3921:	0	0	0	0	0	2	0	1
3929:	1	1	0	0	0	1	0	0
3937:	1	0	0	0	0	0	0	0
3945:	0	1	0	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	1	0	1	1	0	0	0	0
3969:	0	0	0	0	0	0	0	0
3977:	1	0	0	0	0	0	0	0
3985:	0	0	0	0	0	1	0	0
3993:	0	1	1	0	0	0	0	0
4001:	0	1	0	0	0	1	0	0
4009:	0	0	0	0	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	1	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	2	0	0	0	0	0	0
4049:	1	1	0	0	0	0	0	0
4057:	1	0	0	0	0	0	0	0
4065:	1	0	0	0	0	0	0	1
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	1	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Sample ID : 1303013-16

Page : 1
Acquisition date : 2-APR-2013 06:58:54

VAX/VMS Peak Search Report Generated 2-APR-2013 07:59:13.09

Configuration : DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301316_GE1_GAS1202_190152.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : MQZ-BKGD-N-130303
Deposition Date :
Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 2-APR-2013 06:58:54.
Sample ID : 1303013-16 Sample Quantity : 4.79620E+02 GRAM
Sample type : SOLID Sample Geometry : 0
Detector name : GE1 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:01.34 0.0%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	46.25*	131	482	1.47	46.48	43	6	57.5		PB-210
1	74.92*	660	616	1.60	75.15	58	23	15.2	4.00E+01	AM-243
1	89.46	175	546	1.78	89.69	82	22	45.7	1.47E+01	CD-109
1	92.86*	223	496	1.78	93.09	82	22	36.3		
1	182.93	34	116	1.47	183.16	182	8	82.3	3.88E+00	
1	185.93*	234	307	1.72	186.16	182	8	26.7		RA-226
0	210.29	70	372	1.30	210.51	207	7	95.5		
1	238.62*	991	204	1.77	238.84	234	11	7.5	3.08E+01	PB-212
1	241.83*	246	184	1.57	242.05	234	11	22.5		RA-224
0	270.48	109	297	2.10	270.70	267	9	60.0		
2	295.13*	467	149	1.78	295.34	290	22	11.9	3.34E+00	PB-214
2	300.51	68	159	2.00	300.72	290	22	67.2		PB-212
0	321.89	41	180	2.58	322.10	318		8118.9		
0	337.97*	158	241	1.91	338.18	334	9	39.1		
0	351.97*	695	235	1.52	352.18	347	10	11.3		PB-214
0	388.71	36	140	2.74	388.92	385		7112.9		
0	462.83	78	140	1.93	463.03	458	10	61.3		
0	475.12	30	74	1.12	475.32	473	6	96.8		
0	510.77*	105	133	1.57	510.97	506	10	49.7		
0	583.21*	279	98	1.88	583.41	579	9	17.8		TL-208
0	609.52*	510	113	1.90	609.71	605	11	12.2		BI-214
1	661.83*	51	74	1.88	662.02	656	14	60.9	1.26E+00	CS-137
1	666.00	24	71	2.03	666.18	656		14123.3		
0	727.35	70	73	1.96	727.54	724	8	48.4		BI-212
3	754.44	21	33	2.51	754.62	753	21	87.8	2.82E+00	
3	768.19	48	79	2.52	768.37	753	21	70.2		
0	795.66	39	56	1.77	795.84	791	7	70.7		
0	861.34	32	70	1.84	861.52	856	10	102.9		TL-208
0	869.54	25	50	3.97	869.71	866		8104.7		
0	895.32	63	60	6.80	895.49	889	14	57.7		
0	911.43*	161	63	1.95	911.60	907	10	24.5		
0	978.48	100	224	2.01	978.64	966	29	97.9		
0	1001.55*	21	36	2.62	1001.72	998		8112.1		PA-234M
0	1120.89*	77	69	2.17	1121.05	1116	10	47.0		BI-214
0	1155.82	25	57	2.69	1155.98	1151		9113.5		
0	1221.72	62	112	9.47	1221.87	1213	18	84.3		

AG

4/2/13

0338

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1238.26	92	70	2.24	1238.40	1233	12	41.7		
0	1282.10	27	19	2.13	1282.25	1279	8	69.3		
0	1310.74	19	39	1.61	1310.88	1306		9126.5		
1	1377.65*	39	13	2.32	1377.79	1373	21	46.1	3.02E+00	
1	1381.07	9	12	2.32	1381.21	1373		21173.0		
1	1397.86	10	9	2.12	1398.00	1395		17119.1	3.00E+00	
1	1402.86	12	10	2.12	1403.00	1395		17111.4		
1	1408.08	16	13	2.33	1408.21	1395		17 89.3		
0	1461.14*	847	22	1.98	1461.27	1456	11	7.2		K-40
0	1496.32	11	8	1.99	1496.45	1493		8107.6		
0	1504.62	8	7	1.79	1504.75	1501		7130.5		
0	1509.70	16	9	1.50	1509.83	1508		7 81.2		
0	1558.67	15	12	7.00	1558.80	1553		12105.8		
0	1600.75	11	11	1.28	1600.88	1597		9127.9		
8	1647.20	6	3	3.01	1647.32	1646	9	85.9	3.66E+00	
8	1651.57	10	5	3.82	1651.69	1646	9	91.4		
1	1725.88	9	4	2.44	1726.00	1724	12	63.3	2.34E+00	
1	1729.66	20	5	2.44	1729.78	1724	12	61.9		
0	1764.76*	83	3	2.52	1764.88	1761	9	23.4		BI-214
0	1798.59	10	4	2.78	1798.70	1795	8	93.8		
0	1815.98	7	2	2.87	1816.09	1813	7	99.2		
0	2033.17	11	2	1.55	2033.26	2029	9	78.9		
0	2103.97	20	5	2.85	2104.06	2100	7	58.9		
0	2128.14	7	3	1.12	2128.22	2124		8126.6		
0	2204.20*	34	3	2.96	2204.28	2198	11	40.5		BI-214
3	2236.17	7	0	3.12	2236.25	2235	8	48.5	1.12E+00	
3	2239.70	10	0	3.13	2239.78	2235	8	72.3		
0	2277.01	8	3	1.87	2277.08	2273		7107.1		
0	2424.83	5	3	1.63	2424.89	2422		6152.9		
0	2449.02	6	4	2.38	2449.08	2444		8141.4		
0	2614.72*	94	2	3.77	2614.77	2611	8	22.0		TL-208

Total number of lines in spectrum 67
Number of unidentified lines 35
Number of lines tentatively identified by NID 32 47.76%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.463E+01	2.463E+01	0.313E+01	12.72	
TL-208	1.41E+10Y	1.00	1.276E+00	1.276E+00	0.202E+00	15.87	
PB-210	22.26Y	1.00	1.867E+00	1.871E+00	1.088E+00	58.14	
BI-212	1.41E+10Y	1.00	1.057E+00	1.057E+00	0.523E+00	49.46	
PB-212	1.41E+10Y	1.00	1.696E+00	1.696E+00	0.381E+00	22.45	
BI-214	1602.00Y	1.00	1.717E+00	1.717E+00	0.218E+00	12.67	
PB-214	1602.00Y	1.00	1.935E+00	1.935E+00	0.358E+00	18.47	
RA-224	1.41E+10Y	1.00	4.776E+00	4.776E+00	1.532E+00	32.08	
RA-226	1602.00Y	1.00	4.711E+00	4.711E+00	8.730E+00	185.32	
PA-234M	4.47E+09Y	1.00	5.208E+00	5.208E+00	5.861E+00	112.54	
Total Activity :			4.887E+01	4.888E+01			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CD-109	464.00D	1.05	2.480E+00	2.595E+00	1.225E+00	47.20	
CS-137	30.17Y	1.00	9.824E-02	9.842E-02	6.075E-02	61.73	
Total Activity :			2.578E+00	2.693E+00			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-243	7380.00Y	1.00	5.298E-01	5.298E-01	0.944E-01	17.82	
Total Activity :			5.298E-01	5.298E-01			

Grand Total Activity : 5.198E+01 5.210E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/GRAM	pCi/GRAM	%Error	
K-40	1460.81	10.67*	5.045E-01	2.463E+01	2.463E+01	12.72	OK
Final Mean for 1 Valid Peaks = 2.463E+01+/- 3.132E+00 (12.72%)							
TL-208	583.14	30.22*	1.055E+00	1.372E+00	1.372E+00	20.85	OK
	860.37	4.48	7.641E-01	1.478E+00	1.478E+00	103.41	OK
	2614.66	35.85	3.498E-01	1.168E+00	1.168E+00	24.98	OK
Final Mean for 3 Valid Peaks = 1.276E+00+/- 2.025E-01 (15.87%)							
PB-210	46.50	4.25*	2.577E+00	1.867E+00	1.871E+00	58.14	OK
Final Mean for 1 Valid Peaks = 1.871E+00+/- 1.088E+00 (58.14%)							
BI-212	727.17	11.80*	8.782E-01	1.057E+00	1.057E+00	49.46	OK
	1620.62	2.75	4.685E-01	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 1.057E+00+/- 5.228E-01 (49.46%)							
PB-212	238.63	44.60*	2.057E+00	1.691E+00	1.691E+00	23.60	OK
	300.09	3.41	1.767E+00	1.756E+00	1.756E+00	73.00	OK
Final Mean for 2 Valid Peaks = 1.696E+00+/- 3.809E-01 (22.45%)							
BI-214	609.31	46.30*	1.017E+00	1.695E+00	1.695E+00	16.18	OK
	1120.29	15.10	6.174E-01	1.289E+00	1.289E+00	47.86	OK
	1764.49	15.80	4.419E-01	1.856E+00	1.856E+00	25.43	OK
	2204.22	4.98	3.841E-01	2.822E+00	2.822E+00	41.91	OK
Final Mean for 4 Valid Peaks = 1.717E+00+/- 2.176E-01 (12.67%)							
PB-214	295.21	19.19	1.787E+00	2.133E+00	2.133E+00	31.57	OK
	351.92	37.19*	1.574E+00	1.858E+00	1.858E+00	22.71	OK
Final Mean for 2 Valid Peaks = 1.935E+00+/- 3.576E-01 (18.47%)							
RA-224	240.98	3.95*	2.045E+00	4.776E+00	4.776E+00	32.08	OK
Final Mean for 1 Valid Peaks = 4.776E+00+/- 1.532E+00 (32.08%)							
RA-226	186.21	3.28*	2.369E+00	4.711E+00	4.711E+00	185.32	OK
Final Mean for 1 Valid Peaks = 4.711E+00+/- 8.730E+00 (185.32%)							
PA-234M	1001.03	0.92*	6.754E-01	5.208E+00	5.208E+00	112.54	OK
Final Mean for 1 Valid Peaks = 5.208E+00+/- 5.861E+00 (112.54%)							

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
CD-109	88.03	3.72*	2.962E+00	2.480E+00	2.595E+00	47.20	OK

Final Mean for 1 Valid Peaks = 2.595E+00+/- 1.225E+00 (47.20%)

CS-137	661.65	85.12*	9.499E-01	9.824E-02	9.842E-02	61.73	OK
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Final Mean for 1 Valid Peaks = 9.842E-02+/- 6.075E-02 (61.73%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
AM-243	74.67	66.00*	2.955E+00	5.298E-01	5.298E-01	17.82	OK

Final Mean for 1 Valid Peaks = 5.298E-01+/- 9.439E-02 (17.82%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.463E+01	3.132E+00	6.880E-01	6.649E-02	35.798
CD-109	2.595E+00	1.225E+00	1.552E+00	1.750E-01	1.672
CS-137	9.842E-02	6.075E-02	7.880E-02	7.312E-03	1.249
TL-208	1.276E+00	2.025E-01	2.077E-01	2.109E-02	6.144
PB-210	1.871E+00	1.088E+00	1.359E+00	1.072E-01	1.377
BI-212	1.057E+00	5.228E-01	5.851E-01	5.423E-02	1.806
PB-212	1.696E+00	3.809E-01	1.260E-01	2.774E-02	13.465
BI-214	1.717E+00	2.176E-01	1.325E-01	1.312E-02	12.961
PB-214	1.935E+00	3.576E-01	1.423E-01	2.745E-02	13.604
RA-224	4.776E+00	1.532E+00	1.432E+00	3.224E-01	3.335
RA-226	4.711E+00	8.730E+00	1.670E+00	3.061E+00	2.822
PA-234M	5.208E+00	5.861E+00	7.779E+00	6.732E-01	0.670
AM-243	5.298E-01	9.439E-02	8.992E-02	7.496E-03	5.892

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.524E-01		5.217E-01	8.235E-01	8.815E-02	-0.185
NA-22	-1.074E-02		4.867E-02	7.557E-02	6.753E-03	-0.142
AL-26	2.304E-02		1.838E-02	5.219E-02	4.768E-03	0.442
TI-44	3.711E-02		4.295E-02	6.735E-02	5.234E-03	0.551
SC-46	5.520E-03		5.174E-02	8.532E-02	7.468E-03	0.065
V-48	-2.080E-01		1.660E-01	2.571E-01	2.230E-02	-0.809
CR-51	3.798E-01		7.137E-01	1.192E+00	3.013E-01	0.319
MN-54	1.900E-02		5.005E-02	9.141E-02	8.235E-03	0.208
CO-56	-3.193E-02		5.324E-02	9.014E-02	8.077E-03	-0.354
CO-57	4.975E-02		4.066E-02	6.907E-02	7.675E-03	0.720
CO-58	-3.664E-02		5.766E-02	9.733E-02	8.873E-03	-0.376
FE-59	-1.219E-01		1.395E-01	2.255E-01	2.066E-02	-0.540
CO-60	5.149E-03		5.467E-02	9.853E-02	8.076E-03	0.052
ZN-65	-8.138E-03		1.212E-01	1.906E-01	1.603E-02	-0.043
SE-75	3.860E-02		6.741E-02	1.041E-01	2.886E-02	0.371
RB-82	-1.893E-01		7.576E-01	1.185E+00	1.089E-01	-0.160
RB-83	2.647E-02		9.479E-02	1.668E-01	2.801E-02	0.159
KR-85	1.626E+01		9.635E+00	1.726E+01	1.830E+00	0.942
SR-85	9.779E-02		5.793E-02	1.038E-01	1.100E-02	0.942
Y-88	-3.725E-02		3.782E-02	5.343E-02	4.854E-03	-0.697
NB-93M	-3.507E+00		1.033E+00	4.080E-01	9.871E-02	-8.595
NB-94	2.010E-02		4.604E-02	7.771E-02	6.876E-03	0.259
NB-95	1.079E-01		8.473E-02	1.625E-01	1.498E-02	0.664
ZR-95	8.107E-03		1.002E-01	1.808E-01	1.818E-02	0.045
RU-103	-5.345E-02		6.405E-02	1.078E-01	1.670E-02	-0.496
RU-106	1.194E-01		3.585E-01	6.646E-01	9.388E-02	0.180
AG-108M	-9.385E-03		4.594E-02	7.247E-02	6.719E-03	-0.130
AG-110M	-3.605E-03		4.637E-02	7.439E-02	6.931E-03	-0.048
SN-113	1.870E-02		6.189E-02	1.030E-01	1.113E-02	0.182
TE123M	-5.647E-03		4.813E-02	7.817E-02	7.399E-03	-0.072

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-124	-4.236E-02		6.169E-02	9.249E-02	9.226E-03	-0.458
I-125	-4.905E-01		8.058E-01	1.318E+00	1.239E-01	-0.372
SB-125	-2.926E-02		1.145E-01	2.027E-01	2.196E-02	-0.144
SB-126	1.555E-01		4.193E-01	7.041E-01	6.529E-02	0.221
SN-126	4.527E-01		1.205E-01	1.918E-01	1.832E-02	2.360
SB-127	-6.231E+00		2.366E+01	4.169E+01	3.868E+00	-0.149
I-129	1.332E-02		7.248E-02	1.231E-01	1.352E-02	0.108
I-131	-2.024E-01		5.058E-01	8.897E-01	1.488E-01	-0.228
BA-133	-1.579E-02		5.551E-02	8.823E-02	1.854E-02	-0.179
CS-134	-4.394E-03		4.302E-02	6.871E-02	6.852E-03	-0.064
CS-135	2.127E-01		2.364E-01	3.629E-01	1.035E-01	0.586
CS-136	-1.084E-01		2.716E-01	4.664E-01	4.122E-02	-0.232
LA-138	4.798E-03		5.586E-02	1.043E-01	9.842E-03	0.046
CE-139	-6.563E-03		4.735E-02	7.686E-02	7.016E-03	-0.085
BA-140	5.231E-01		7.446E-01	1.361E+00	4.582E-01	0.384
LA-140	-5.934E-03		2.563E-01	4.138E-01	3.894E-02	-0.014
CE-141	-5.069E-02		1.335E-01	2.158E-01	5.409E-02	-0.235
CE-144	-3.969E-01		3.323E-01	5.133E-01	5.450E-02	-0.773
PM-144	-5.473E-03		4.061E-02	7.212E-02	6.702E-03	-0.076
PM-145	-9.769E-02		1.757E-01	2.685E-01	1.750E-01	-0.364
PM-146	-3.830E-03		8.880E-02	1.437E-01	1.540E-02	-0.027
ND-147	-6.875E-01		1.786E+00	3.125E+00	3.288E-01	-0.220
EU-152	3.196E-01	+	2.881E-01	5.487E-01	6.342E-02	0.582
GD-153	-5.083E-02		1.609E-01	2.405E-01	2.449E-02	-0.211
EU-154	-1.649E-02		1.327E-01	2.098E-01	1.875E-02	-0.079
EU-155	5.718E-01		1.471E-01	2.341E-01	2.211E-02	2.442
EU-156	-1.097E+00		1.634E+00	2.719E+00	6.260E-01	-0.404
HO-166M	-3.140E-02		7.004E-02	1.211E-01	1.124E-02	-0.259
HF-172	-2.824E-01		3.077E-01	4.836E-01	5.293E-02	-0.584
LU-172	1.036E+00		1.857E+00	3.455E+00	2.924E-01	0.300
LU-173	3.257E-01		2.013E-01	3.136E-01	9.231E-02	1.039
HF-175	7.155E-03		6.579E-02	8.681E-02	1.819E-02	0.082
LU-176	-1.186E-03		3.449E-02	5.602E-02	1.526E-02	-0.021
TA-182	6.707E-01	+	3.210E-01	4.756E-01	3.986E-02	1.410
IR-192	7.841E-02		1.027E-01	1.501E-01	1.608E-02	0.523
HG-203	3.003E-03		7.871E-02	1.176E-01	3.668E-02	0.026
BI-207	-9.053E-03		3.299E-02	5.806E-02	5.962E-03	-0.156
BI-210M	-1.796E-02		7.957E-02	1.169E-01	3.168E-02	-0.154
PB-211	-1.933E-01		1.237E+00	2.196E+00	2.337E-01	-0.088
RN-219	4.735E-01		5.164E-01	9.664E-01	1.028E-01	0.490
RA-223	-9.101E-01		9.236E-01	1.355E+00	3.316E-01	-0.672
RA-225	1.325E-01		4.907E-01	7.706E-01	6.638E-02	0.172
TH-227	1.917E+00		5.611E-01	7.182E-01	1.543E-01	2.669
AC-228	1.245E+00	+	3.275E-01	5.302E-01	4.617E-02	2.348
TH-230	1.019E+01		1.098E+01	1.724E+01	1.337E+00	0.591
PA-231	1.832E+00		1.582E+00	2.604E+00	7.257E-01	0.704
TH-231	-7.230E-02		3.415E-01	5.710E-01	7.366E-02	-0.127
PA-233	-7.595E-02		1.895E-01	2.715E-01	9.122E-02	-0.280

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234	5.687E-02		1.568E-01	2.604E-01	2.790E-02	0.218
TH-234	2.063E+00		1.158E+00	1.928E+00	1.432E-01	1.070
U-235	-9.314E-02		3.202E-01	5.212E-01	9.549E-02	-0.179
NP-237	1.385E+00		3.566E-01	5.675E-01	5.359E-02	2.441
AM-241	1.838E-03		1.118E-01	1.710E-01	1.225E-02	0.011
CM-243	2.703E-01		2.765E-01	4.214E-01	1.295E-01	0.641

Total number of lines in spectrum 67
Number of unidentified lines 35
Number of lines tentatively identified by NID 32 47.76%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.463E+01	2.463E+01	0.313E+01	12.72	
TL-208	1.41E+10Y	1.00	1.276E+00	1.276E+00	0.202E+00	15.87	
PB-210	22.26Y	1.00	1.867E+00	1.871E+00	1.088E+00	58.14	
BI-212	1.41E+10Y	1.00	1.057E+00	1.057E+00	0.523E+00	49.46	
PB-212	1.41E+10Y	1.00	1.696E+00	1.696E+00	0.381E+00	22.45	
BI-214	1602.00Y	1.00	1.717E+00	1.717E+00	0.218E+00	12.67	
PB-214	1602.00Y	1.00	1.935E+00	1.935E+00	0.358E+00	18.47	
RA-224	1.41E+10Y	1.00	4.776E+00	4.776E+00	1.532E+00	32.08	
RA-226	1602.00Y	1.00	4.711E+00	4.711E+00	8.730E+00	185.32	
PA-234M	4.47E+09Y	1.00	5.208E+00	5.208E+00	5.861E+00	112.54	
Total Activity :			4.887E+01	4.888E+01			

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CD-109	464.00D	1.05	2.480E+00	2.595E+00	1.225E+00	47.20	
CS-137	30.17Y	1.00	9.824E-02	9.842E-02	6.075E-02	61.73	
Total Activity :			2.578E+00	2.693E+00			

Nuclide Type : ACTIVATION

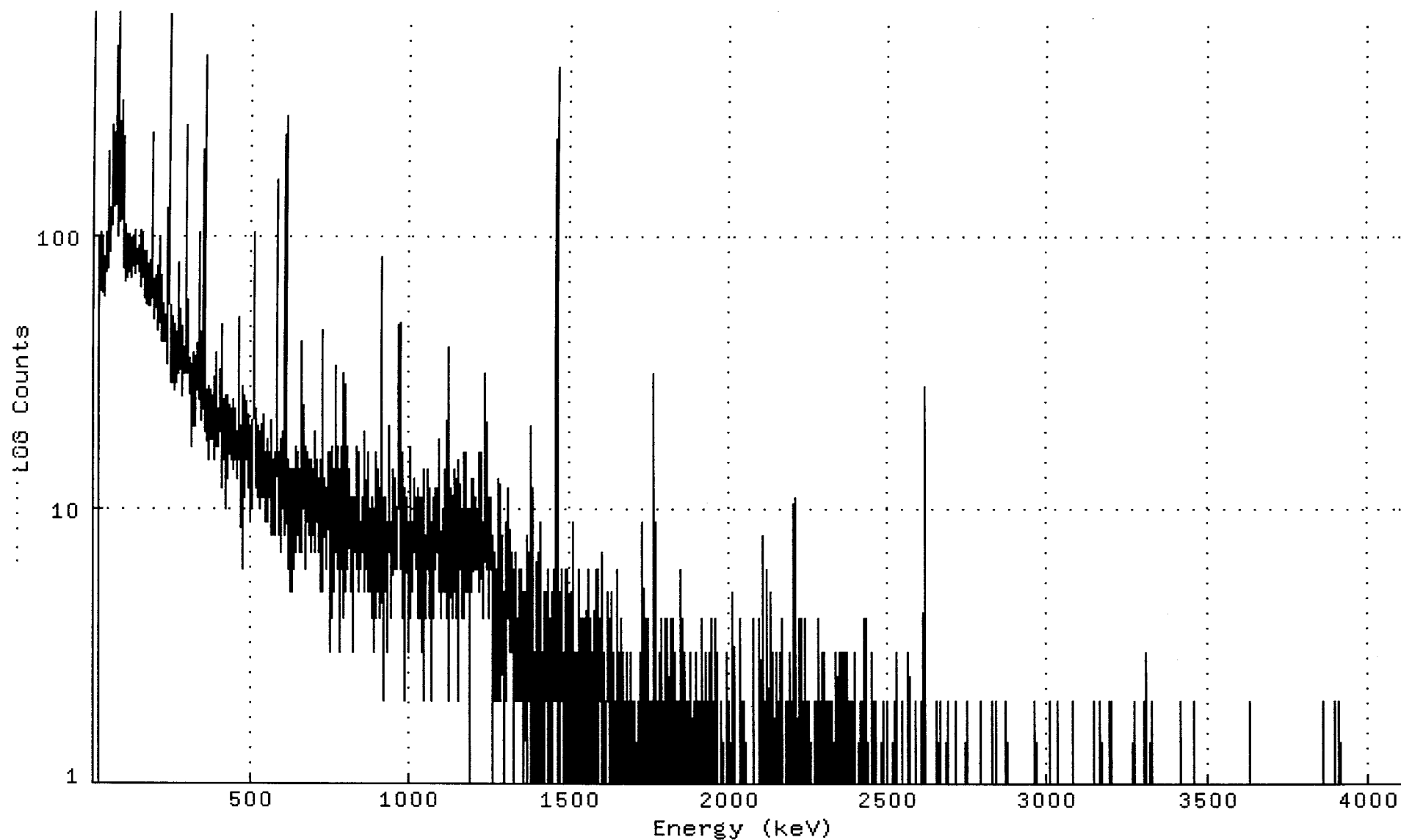
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-243	7380.00Y	1.00	5.298E-01	5.298E-01	0.944E-01	17.82	
Total Activity :			5.298E-01	5.298E-01			

Grand Total Activity : 5.198E+01 5.210E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301316_GE1_GAS1202_190152.CNF;1
Title :
Sample Title: MQZ-BKGD-N-130303
Start Time: 2-APR-2013 06:58: Sample Time: 3-MAR-2013 00:00: Energy Offset: -2.35223E-01
Real Time : 0 01:00:01.34 Sample ID : 1303013-16 Energy Slope : 1.00007E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301316_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	46	99	91	87	73	70
25:	102	69	63	66	80	62	63	98
33:	68	80	68	60	83	70	72	81
41:	83	82	82	96	73	142	200	75
49:	83	102	94	87	120	102	102	103
57:	125	109	118	133	144	134	251	224
65:	154	154	127	156	152	130	132	152
73:	165	230	488	215	657	360	130	99
81:	153	113	115	160	174	114	258	225
89:	114	203	132	159	310	168	108	76
97:	82	91	93	109	78	82	68	86
105:	87	96	70	100	90	91	90	92
113:	85	80	85	100	75	70	76	92
121:	90	97	95	90	90	86	77	85
129:	94	104	72	80	74	79	74	79
137:	84	87	85	83	87	90	80	89
145:	73	80	91	65	70	80	103	80
153:	85	102	86	91	71	76	70	87
161:	75	60	65	68	59	65	87	56
169:	74	76	67	78	55	55	56	63
177:	67	71	68	74	55	59	80	68
185:	91	235	131	60	59	69	55	65
193:	59	66	49	59	56	71	68	63
201:	63	56	58	56	51	77	45	61
209:	99	68	58	57	54	41	71	59
217:	49	68	63	51	54	56	41	49
225:	46	51	41	49	49	44	44	53
233:	54	34	49	72	68	231	638	107
241:	95	184	96	32	40	47	45	40
249:	29	39	34	29	42	41	50	43
257:	43	38	47	34	27	37	43	44
265:	30	32	29	44	31	63	79	53
273:	33	42	32	38	43	53	41	40
281:	33	30	38	46	26	37	39	33
289:	34	32	34	31	40	47	252	217
297:	34	36	38	58	58	31	38	33
305:	31	32	27	27	28	24	24	24
313:	26	17	34	26	29	20	26	27
321:	37	35	29	27	20	22	26	39
329:	40	35	29	27	33	25	35	39
337:	37	102	94	21	26	26	24	27
345:	24	26	25	34	23	25	95	449
353:	221	26	23	24	19	22	22	27
361:	27	25	20	15	24	28	22	25
369:	20	25	23	26	18	23	27	25
377:	18	18	22	26	23	23	22	26
385:	15	21	25	37	32	29	17	22
393:	20	18	17	21	19	19	21	26
401:	22	24	32	30	19	33	23	12
409:	32	47	20	22	18	15	25	20
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449:	23	19	19	17	22	15	19	14
457:	14	13	18	15	16	19	50	39
465:	22	12	14	15	14	20	12	6
473:	18	16	13	28	15	14	11	15
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497:	17	13	9	15	20	14	13	21
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513:	26	21	13	14	17	12	12	20
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537:	19	22	13	14	11	17	14	11
545:	11	13	9	16	11	11	18	16
553:	9	16	14	14	11	16	11	15
561:	12	21	16	9	9	15	8	9
569:	15	8	12	13	12	11	8	16
577:	9	14	10	17	15	22	158	130
585:	19	9	8	12	16	13	13	13
593:	7	12	13	17	18	14	18	12
601:	10	19	12	16	8	15	12	35
609:	200	270	49	15	13	10	11	7
617:	6	10	9	15	10	14	13	5
625:	11	11	13	13	10	10	12	5
633:	14	7	11	14	11	6	10	7
641:	14	8	10	17	10	16	8	13
649:	15	12	9	11	13	7	14	12
657:	11	9	7	11	28	41	23	14
665:	13	24	20	10	10	13	17	8
673:	7	6	9	11	11	9	16	10
681:	10	11	10	10	15	8	9	7
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697:	14	8	12	14	13	14	7	19
705:	9	11	14	15	10	9	14	12
713:	7	8	8	13	12	5	15	12
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729:	14	12	8	13	9	10	10	6
737:	12	7	12	12	7	10	11	10
745:	10	16	13	16	10	11	11	13
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777:	11	11	6	3	11	14	8	9
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793:	12	10	31	26	5	14	5	12
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825:	11	11	10	11	7	10	8	6
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841:	15	10	7	9	6	9	9	6
849:	9	8	11	7	10	7	10	5
857:	9	11	5	19	16	10	9	11
865:	7	6	8	11	16	11	7	11
873:	5	7	6	9	10	7	5	7
881:	9	11	6	4	8	10	7	3
889:	3	9	9	9	9	16	4	4
897:	10	10	14	11	9	6	5	12
905:	8	4	8	7	8	17	83	67

913:	16	11	10	2	11	7	7	4
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929:	8	6	3	8	4	20	13	8
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945:	4	8	11	6	9	14	13	7
953:	7	9	8	6	13	6	6	7
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977:	6	4	4	10	6	12	6	6
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993:	11	3	3	9	5	3	4	11
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1073:	4	11	10	6	10	6	9	12
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1089:	8	9	7	9	5	18	10	7
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1113:	14	4	6	9	5	10	12	37
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1129:	8	7	10	11	8	9	4	9
1137:	9	14	10	5	5	5	11	9
1145:	13	8	10	4	5	9	2	10
1153:	4	15	13	12	10	10	6	8
1161:	6	10	7	10	7	4	9	6
1169:	16	7	8	4	8	6	16	12
1177:	6	5	5	5	9	10	10	8
1185:	10	7	7	1	10	6	6	10
1193:	13	13	5	9	5	7	10	7
1201:	7	13	11	11	6	10	10	10
1209:	9	9	10	7	6	8	10	9
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1257:	8	6	7	6	1	8	6	4
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1281:	13	12	6	3	5	2	2	5
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1297:	3	2	5	5	9	7	2	8
1305:	4	8	4	5	6	8	12	6
1313:	6	3	3	5	6	6	4	7
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1337:	3	3	4	4	2	2	4	5
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1353:	4	5	2	2	0	3	1	2
1361:	4	5	5	3	3	4	3	1
1369:	3	8	6	2	2	6	6	5
1377:	8	20	10	2	6	1	3	3
1385:	4	12	4	1	1	3	1	3

1393:	1	2	1	3	2	6	1	6
1401:	7	4	7	2	1	3	5	9
1409:	6	3	1	3	3	3	1	2
1417:	2	2	0	4	5	3	1	2
1425:	3	2	5	4	5	3	4	2
1433:	6	4	3	1	2	1	4	0
1441:	3	4	4	1	1	4	1	5
1449:	3	6	2	5	5	2	3	2
1457:	2	3	9	126	412	272	45	2
1465:	3	1	2	4	3	3	5	1
1473:	6	3	2	4	2	3	2	3
1481:	2	1	2	2	3	1	6	3
1489:	3	3	2	2	0	2	3	6
1497:	4	1	2	1	1	0	5	5
1505:	1	3	0	2	9	5	4	1
1513:	2	2	1	1	1	2	3	2
1521:	0	3	2	2	2	1	6	0
1529:	2	2	4	1	3	4	3	3
1537:	1	2	1	1	1	3	3	4
1545:	1	2	2	4	2	1	3	0
1553:	2	0	1	3	6	3	3	1
1561:	1	2	4	1	1	1	4	2
1569:	1	3	2	3	1	3	2	4
1577:	1	2	2	3	6	0	5	5
1585:	2	0	3	5	4	3	6	1
1593:	4	3	4	2	3	2	2	7
1601:	3	2	2	1	0	1	1	3
1609:	3	2	0	2	1	1	1	2
1617:	2	2	2	2	3	5	3	4
1625:	1	1	4	0	1	3	5	1
1633:	0	2	0	3	0	3	0	1
1641:	1	0	2	1	1	1	4	1
1649:	0	2	6	1	3	0	1	1
1657:	1	0	1	1	4	4	4	1
1665:	1	3	1	2	1	1	2	2
1673:	0	1	1	1	2	1	0	0
1681:	0	3	0	0	2	0	0	1
1689:	3	1	0	0	1	2	0	2
1697:	2	2	0	2	2	2	1	1
1705:	1	1	0	0	0	1	0	1
1713:	2	2	2	0	2	1	2	1
1721:	1	3	3	0	1	5	2	2
1729:	5	9	3	3	2	1	0	0
1737:	0	4	1	3	0	3	0	1
1745:	2	0	4	0	2	2	0	0
1753:	0	0	1	1	2	0	0	0
1761:	0	1	6	27	31	16	5	2
1769:	0	1	0	1	0	2	0	0
1777:	2	0	2	1	0	3	2	1
1785:	1	1	0	4	0	2	2	2
1793:	2	0	1	2	0	4	2	3
1801:	1	1	0	0	4	1	0	3
1809:	2	0	0	0	0	2	0	4
1817:	2	1	0	1	0	0	3	1
1825:	0	4	0	3	1	3	2	1
1833:	0	0	0	0	2	1	1	2
1841:	1	2	2	1	0	4	3	6
1849:	5	3	0	4	3	0	0	1
1857:	1	3	3	1	0	2	2	1
1865:	0	0	0	0	0	1	0	1

1873:	2	1	3	0	0	1	0	3
1881:	1	1	1	0	1	0	0	0
1889:	2	1	1	1	0	0	0	3
1897:	0	2	2	0	0	2	1	1
1905:	0	1	1	0	1	1	4	1
1913:	1	0	0	2	2	1	1	2
1921:	0	2	2	1	2	3	0	1
1929:	1	2	1	0	1	1	3	1
1937:	2	2	1	1	4	2	2	2
1945:	1	2	1	0	2	2	1	0
1953:	1	1	3	4	0	1	1	1
1961:	3	1	1	1	0	0	1	0
1969:	1	0	0	0	2	2	1	2
1977:	0	1	1	0	1	0	0	0
1985:	1	0	1	0	0	3	1	2
1993:	2	1	1	1	0	1	2	2
2001:	0	0	1	1	0	0	2	1
2009:	1	0	1	5	2	1	2	0
2017:	3	1	0	0	0	0	0	0
2025:	0	1	0	0	0	1	1	1
2033:	4	2	2	1	1	0	2	1
2041:	0	1	1	0	0	0	0	2
2049:	1	0	0	0	0	0	1	0
2057:	0	0	1	1	1	0	0	1
2065:	0	0	0	1	1	0	1	1
2073:	0	1	0	0	4	1	1	1
2081:	1	0	1	0	0	1	0	1
2089:	0	0	0	0	0	4	2	0
2097:	2	0	1	2	2	0	8	5
2105:	8	0	0	1	2	2	1	1
2113:	1	1	1	0	1	4	6	4
2121:	0	1	2	0	1	1	5	1
2129:	1	1	0	0	0	2	0	2
2137:	1	3	1	1	0	0	0	0
2145:	3	0	1	0	0	1	1	0
2153:	0	0	2	2	2	1	1	2
2161:	2	3	1	2	0	4	1	1
2169:	0	0	1	0	1	1	1	2
2177:	0	0	1	0	2	1	2	0
2185:	2	1	0	1	1	2	3	1
2193:	1	0	2	1	0	1	1	1
2201:	1	0	9	10	11	3	3	0
2209:	0	0	0	1	0	1	0	0
2217:	3	2	0	4	1	1	1	1
2225:	4	1	2	0	1	1	0	2
2233:	2	0	0	3	0	1	4	2
2241:	2	0	0	1	2	1	1	1
2249:	0	0	1	2	0	0	0	1
2257:	1	0	1	0	1	0	1	0
2265:	0	2	1	1	1	0	2	0
2273:	2	0	1	1	4	3	0	0
2281:	3	0	2	1	0	2	0	2
2289:	0	0	2	2	3	0	2	3
2297:	1	1	0	0	1	0	0	2
2305:	1	1	1	1	1	2	1	2
2313:	1	2	1	1	0	2	1	1
2321:	1	1	0	2	1	0	1	0
2329:	1	0	2	2	0	0	0	3
2337:	2	1	2	1	0	0	2	0
2345:	3	0	0	0	1	2	2	1

2353:	1	3	3	1	1	2	1	1
2361:	3	1	3	0	0	1	1	1
2369:	3	1	0	0	1	0	1	2
2377:	1	0	0	1	0	1	2	1
2385:	1	1	1	1	0	2	1	3
2393:	0	0	1	1	0	1	0	1
2401:	0	0	1	1	1	1	0	1
2409:	2	0	1	1	2	1	0	2
2417:	1	0	1	0	0	0	0	4
2425:	3	1	0	2	4	1	1	2
2433:	0	0	1	0	1	1	1	0
2441:	0	0	1	0	1	1	1	2
2449:	3	2	0	1	0	2	0	0
2457:	0	2	0	1	0	0	0	1
2465:	0	1	0	1	0	1	0	1
2473:	0	0	0	0	0	1	0	1
2481:	2	1	0	1	0	1	0	0
2489:	1	0	1	1	0	2	0	0
2497:	0	0	0	0	0	1	1	0
2505:	0	0	0	1	0	0	0	0
2513:	1	0	0	0	2	2	1	1
2521:	0	0	3	1	0	1	0	0
2529:	0	0	0	0	0	0	0	0
2537:	0	0	0	0	1	2	1	1
2545:	1	1	0	0	0	0	0	0
2553:	0	0	0	1	0	1	0	0
2561:	0	1	0	3	2	0	2	0
2569:	1	1	1	0	0	0	0	0
2577:	1	1	0	1	0	0	1	0
2585:	0	2	0	0	1	0	1	0
2593:	0	0	0	0	0	0	0	0
2601:	1	2	1	0	1	1	0	0
2609:	0	1	0	0	18	28	24	26
2617:	5	0	0	0	0	0	1	0
2625:	0	1	0	0	0	1	0	1
2633:	0	0	0	0	0	0	0	0
2641:	0	0	0	1	0	0	0	1
2649:	0	2	0	0	0	0	1	1
2657:	0	0	0	0	2	0	0	0
2665:	1	0	0	0	0	0	1	0
2673:	0	1	0	1	0	0	1	0
2681:	0	0	1	0	2	1	0	1
2689:	0	1	0	0	0	0	0	0
2697:	0	0	0	1	0	0	1	1
2705:	0	0	0	0	0	2	0	1
2713:	0	1	0	0	0	0	0	1
2721:	1	1	0	1	0	0	0	0
2729:	0	0	0	1	0	0	0	0
2737:	0	0	1	0	0	1	1	2
2745:	1	0	0	0	1	0	1	0
2753:	1	0	0	1	1	0	0	0
2761:	1	1	0	0	1	0	0	0
2769:	0	0	1	0	0	1	0	1
2777:	1	0	0	0	0	0	0	0
2785:	0	0	0	2	0	0	0	1
2793:	0	0	0	0	0	0	0	1
2801:	0	1	1	0	0	1	1	0
2809:	0	0	0	0	0	1	0	0
2817:	0	1	1	1	1	0	0	0
2825:	0	2	0	0	0	0	0	0

2833:	0	1	0	1	2	0	1	0
2841:	1	1	0	1	0	0	0	0
2849:	0	0	0	0	0	0	0	0
2857:	1	0	1	0	0	0	1	0
2865:	1	0	1	2	2	0	0	0
2873:	0	0	1	0	0	0	0	0
2881:	0	0	0	0	0	1	0	0
2889:	0	0	0	0	0	1	0	0
2897:	0	0	0	0	0	0	0	0
2905:	0	0	1	1	0	0	1	0
2913:	1	1	0	0	0	0	0	1
2921:	0	1	0	0	1	0	0	0
2929:	0	1	0	0	0	1	0	0
2937:	0	0	0	0	0	0	0	1
2945:	0	0	1	0	1	0	0	0
2953:	1	0	0	0	0	1	2	0
2961:	0	0	0	0	0	0	0	0
2969:	0	0	0	0	1	0	0	0
2977:	0	0	1	0	0	0	0	0
2985:	1	1	0	0	0	0	0	0
2993:	1	1	0	1	0	0	0	0
3001:	0	0	2	1	0	1	0	0
3009:	0	0	0	0	1	1	0	1
3017:	0	0	0	1	0	1	0	0
3025:	0	0	0	0	0	2	0	0
3033:	0	1	0	1	0	0	1	0
3041:	1	0	1	1	0	1	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	1	0	0
3065:	0	1	0	1	1	0	0	0
3073:	1	1	0	2	1	1	0	0
3081:	0	0	0	0	0	0	0	0
3089:	0	1	0	0	0	0	0	0
3097:	0	0	0	0	0	0	0	0
3105:	0	1	0	0	0	1	0	0
3113:	0	0	0	0	0	1	0	0
3121:	0	0	0	0	0	0	0	0
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	2	0	0	0
3145:	1	0	0	1	0	0	0	0
3153:	0	0	0	1	0	0	0	0
3161:	0	0	2	0	0	0	0	0
3169:	0	0	1	0	0	0	0	0
3177:	0	0	0	1	0	0	0	0
3185:	0	0	0	0	1	0	0	0
3193:	2	0	1	1	2	1	1	0
3201:	0	0	0	0	0	1	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	1	0	0	0	0	0	0
3225:	1	1	0	0	0	1	0	0
3233:	0	0	0	1	0	0	0	0
3241:	0	0	0	0	0	0	0	1
3249:	0	0	0	1	0	0	0	0
3257:	0	0	0	0	0	0	0	0
3265:	0	2	0	1	0	1	0	0
3273:	1	0	0	0	0	0	0	0
3281:	0	1	0	0	1	0	0	0
3289:	1	0	1	1	0	0	0	0
3297:	1	0	0	2	0	3	0	0
3305:	1	0	0	0	0	0	0	0

3313:	0	0	0	0	0	0	0	2
3321:	0	0	0	0	0	1	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	0	1	0	0
3353:	0	0	0	0	0	0	0	0
3361:	0	1	0	0	0	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	0	0	0	0	1
3385:	1	0	0	1	0	0	0	0
3393:	1	0	1	0	0	0	0	0
3401:	0	0	0	0	0	1	0	1
3409:	0	0	0	2	0	1	0	0
3417:	0	0	0	0	1	0	1	0
3425:	0	0	0	1	1	0	0	0
3433:	1	0	0	0	0	0	0	0
3441:	0	0	0	0	0	1	0	0
3449:	0	0	0	0	0	2	0	0
3457:	1	0	0	0	1	0	0	0
3465:	0	0	0	0	1	0	0	0
3473:	1	0	0	0	0	1	0	0
3481:	0	0	1	0	0	0	1	1
3489:	0	0	0	0	1	0	0	0
3497:	0	0	0	0	0	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	0	0	1	0	0	1	0
3521:	0	0	0	0	0	0	0	1
3529:	0	1	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	1
3545:	0	0	0	0	0	0	0	0
3553:	0	0	0	0	0	0	0	0
3561:	0	0	0	0	0	0	0	1
3569:	0	0	1	0	0	0	0	0
3577:	0	0	0	0	0	0	0	1
3585:	0	0	0	0	1	1	0	0
3593:	0	0	0	0	1	0	0	0
3601:	0	0	0	0	1	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	0	1	0	1	1	0
3625:	0	0	0	2	0	0	0	1
3633:	1	0	0	0	0	0	0	0
3641:	0	0	0	0	0	1	0	0
3649:	0	0	0	0	1	1	0	0
3657:	1	0	0	0	1	0	0	0
3665:	0	0	0	1	0	0	0	0
3673:	0	0	0	0	0	0	0	1
3681:	1	0	0	0	0	0	0	0
3689:	0	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	1	0
3705:	0	0	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	0	0	1	0	0	0	0	0
3729:	0	1	0	0	0	0	0	0
3737:	1	0	0	0	0	0	0	1
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	0	0	0	0	0
3761:	0	0	0	0	0	1	0	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	1	0	0	0	0	0
3785:	0	0	1	0	0	0	0	0

3793:	0	0	1	0	0	0	0	1
3801:	0	0	0	1	0	0	0	0
3809:	0	0	0	0	0	0	0	0
3817:	1	0	1	0	0	1	0	1
3825:	0	0	1	0	0	0	0	0
3833:	0	0	0	0	1	0	0	0
3841:	0	0	1	0	0	1	0	1
3849:	0	0	0	0	0	0	0	2
3857:	0	0	0	0	0	0	0	1
3865:	0	0	0	0	0	0	0	0
3873:	0	1	0	0	0	0	0	0
3881:	0	0	0	0	0	0	0	0
3889:	0	0	0	0	2	0	0	0
3897:	0	0	0	0	0	1	1	0
3905:	0	0	2	0	1	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	1
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	1	1	0	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	0	1	0	0	0	0
3961:	1	0	0	0	0	0	0	0
3969:	0	1	0	0	1	1	0	0
3977:	0	0	0	0	0	0	0	0
3985:	0	0	0	0	0	0	0	1
3993:	0	0	0	0	0	0	1	1
4001:	0	1	0	0	0	0	0	0
4009:	0	0	1	1	0	0	0	0
4017:	0	0	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	1	0	0
4049:	1	1	0	0	0	0	0	0
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	0
4073:	0	0	0	0	0	0	0	0
4081:	0	0	0	0	0	0	0	0
4089:	0	0	0	0	0	0	0	0

Sample ID : 1303013-17

Page : 1
Acquisition date : 2-APR-2013 07:47:54

VAX/VMS Peak Search Report Generated 2-APR-2013 08:48:11.57

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Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301317_GE2_GAS1202_190154.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : MQZ-BKGD-S-130303
Deposition Date :
Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 2-APR-2013 07:47:54.
Sample ID : 1303013-17 Sample Quantity : 5.90130E+02 GRAM
Sample type : SOLID Sample Geometry : 0
Detector name : GE2 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.82 0.0%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw %Err	Fit	Nuclides
0	30.34	134	948	5.13	30.46	26	9 85.0		
0	46.32*	36	173	1.83	46.43	44	5123.7		PB-210
0	76.07*	264	270	3.24	76.18	73	7 24.9		AM-243
3	92.43	132	257	1.84	92.54	83	15 42.9	2.61E+00	
0	105.66	57	297	2.01	105.78	102	10116.9		
0	199.28*	62	190	2.09	199.39	195	9 85.2		
4	238.34*	186	94	1.79	238.45	234	11 22.2	8.10E+00	PB-212
4	241.88	47	118	1.86	241.99	234	11 87.3		RA-224
0	294.77*	64	109	1.43	294.88	292	7 61.9		PB-214
1	338.06	49	56	1.82	338.17	334	11 52.6	2.15E+00	
1	341.73	18	49	1.82	341.83	334	11132.3		
0	351.97*	120	119	1.44	352.08	348	9 39.4		PB-214
0	487.21	34	54	2.71	487.32	484	10 86.4		
0	519.65	24	53	8.29	519.75	515	11122.0		
0	582.87*	74	64	2.28	582.97	578	12 50.2		
0	608.98*	78	50	1.33	609.08	606	7 39.8		BI-214
0	665.87	17	24	1.42	665.97	663	7107.0		
0	673.73	29	24	1.20	673.83	670	8 69.3		
0	910.51*	66	20	2.60	910.61	907	10 37.0		
0	1070.76	13	5	3.11	1070.85	1069	5 75.8		
0	1221.34	14	16	2.46	1221.43	1217	7106.1		
0	1293.36	10	10	2.77	1293.44	1289	7128.4		
0	1460.01*	374	8	2.01	1460.09	1455	10 10.9		K-40
0	1659.84	7	2	2.52	1659.92	1656	7 95.4		
0	1763.91*	23	3	3.39	1763.98	1760	9 54.0		BI-214
0	2613.01*	10	0	3.01	2613.06	2608	10 86.0		

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Summary of Nuclide Activity

Page : 2

Sample ID : 1303013-17

Acquisition date : 2-APR-2013 07:47:54

Total number of lines in spectrum 26
 Number of unidentified lines 5
 Number of lines tentatively identified by NID 21 80.77%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	9.466E+00	9.466E+00	1.380E+00	14.58	
PB-210	22.26Y	1.00	5.488E-01	5.502E-01	6.823E-01	124.02	
PB-212	1.41E+10Y	1.00	2.829E-01	2.829E-01	0.762E-01	26.92	
BI-214	1602.00Y	1.00	2.581E-01	2.581E-01	0.880E-01	34.10	
PB-214	1602.00Y	1.00	2.762E-01	2.762E-01	0.972E-01	35.21	
RA-224	1.41E+10Y	1.00	8.199E-01	8.199E-01	7.265E-01	88.61	
Total Activity :			1.165E+01	1.165E+01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-243	7380.00Y	1.00	2.054E-01	2.054E-01	0.547E-01	26.63	
Total Activity :			2.054E-01	2.054E-01			

Grand Total Activity : 1.186E+01 1.186E+01

Flags: "K" = Keyline not found
 "E" = Manually edited

"M" = Manually accepted
 "A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
K-40	1460.81	10.67*	4.705E-01	9.466E+00	9.466E+00	14.58	OK

Final Mean for 1 Valid Peaks = 9.466E+00+/- 1.380E+00 (14.58%)

PB-210	46.50	4.25*	1.969E+00	5.488E-01	5.502E-01	124.02	OK
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Final Mean for 1 Valid Peaks = 5.502E-01+/- 6.823E-01 (124.02%)

PB-212	238.63	44.60*	1.874E+00	2.829E-01	2.829E-01	26.92	OK
	300.09	3.41	1.612E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 2.829E-01+/- 7.617E-02 (26.92%)

BI-214	609.31	46.30*	9.260E-01	2.303E-01	2.303E-01	41.08	OK
	1120.29	15.10	5.678E-01	-----	Line Not Found	-----	Absent
	1764.49	15.80	4.183E-01	4.359E-01	4.359E-01	54.94	OK
	2204.22	4.98	3.725E-01	-----	Line Not Found	-----	Absent

Final Mean for 2 Valid Peaks = 2.581E-01+/- 8.800E-02 (34.10%)

PB-214	295.21	19.19	1.631E+00	2.582E-01	2.582E-01	64.60	OK
	351.92	37.19*	1.436E+00	2.855E-01	2.855E-01	41.93	OK

Final Mean for 2 Valid Peaks = 2.762E-01+/- 9.724E-02 (35.21%)

RA-224	240.98	3.95*	1.863E+00	8.199E-01	8.199E-01	88.61	OK
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Final Mean for 1 Valid Peaks = 8.199E-01+/- 7.265E-01 (88.61%)

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error	Status
AM-243	74.67	66.00*	2.478E+00	2.054E-01	2.054E-01	26.63	OK

Final Mean for 1 Valid Peaks = 2.054E-01+/- 5.469E-02 (26.63%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	9.466E+00	1.380E+00	4.235E-01	3.741E-02	22.350
PB-210	5.502E-01	6.823E-01	9.424E-01	8.192E-02	0.584
PB-212	2.829E-01	7.617E-02	7.716E-02	1.135E-02	3.666
BI-214	2.581E-01	8.800E-02	9.600E-02	9.171E-03	2.688
PB-214	2.762E-01	9.724E-02	9.733E-02	1.340E-02	2.838
RA-224	8.199E-01	7.265E-01	8.771E-01	1.311E-01	0.935
AM-243	2.054E-01	5.469E-02	5.305E-02	4.542E-03	3.871

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	6.874E-02		2.810E-01	5.312E-01	5.308E-02	0.129
NA-22	-4.751E-04		3.404E-02	6.138E-02	5.577E-03	-0.008
AL-26	-4.023E-03		2.021E-02	4.053E-02	3.718E-03	-0.099
TI-44	-2.863E-03		2.288E-02	3.887E-02	3.121E-03	-0.074
SC-46	1.625E-03		3.632E-02	6.655E-02	5.644E-03	0.024
V-48	-3.550E-03		9.714E-02	1.782E-01	1.613E-02	-0.020
CR-51	-7.996E-02		4.458E-01	7.305E-01	1.217E-01	-0.109
MN-54	-3.317E-03		2.729E-02	4.939E-02	4.330E-03	-0.067
CO-56	1.098E-02		2.912E-02	5.713E-02	4.977E-03	0.192
CO-57	-9.911E-03		2.204E-02	3.631E-02	4.441E-03	-0.273
CO-58	1.693E-02		3.063E-02	6.095E-02	5.417E-03	0.278
FE-59	2.695E-03		8.882E-02	1.617E-01	1.693E-02	0.017
CO-60	8.715E-03		3.601E-02	6.902E-02	7.138E-03	0.126
ZN-65	-7.487E-02		7.243E-02	1.110E-01	1.107E-02	-0.674
SE-75	1.533E-02		4.101E-02	7.021E-02	1.228E-02	0.218
RB-82	7.148E-02		4.556E-01	8.484E-01	7.617E-02	0.084
RB-83	8.149E-02	+	1.004E-01	9.460E-02	1.553E-02	0.861
KR-85	-1.409E+01		8.077E+00	1.061E+01	1.058E+00	-1.328
SR-85	-8.476E-02		4.858E-02	6.384E-02	6.365E-03	-1.328
Y-88	-1.575E-02		2.151E-02	3.660E-02	3.368E-03	-0.430
NB-93M	-2.697E+01		1.101E+01	3.148E+00	1.243E+00	-8.569
NB-94	-5.963E-03		2.772E-02	4.926E-02	4.229E-03	-0.121
NB-95	1.246E-02		4.522E-02	8.572E-02	7.725E-03	0.145
ZR-95	-2.308E-02		6.142E-02	1.078E-01	1.064E-02	-0.214
RU-103	1.301E-03		4.164E-02	6.975E-02	1.049E-02	0.019
RU-106	2.953E-02		2.101E-01	3.993E-01	5.556E-02	0.074
AG-108M	-4.326E-03		2.979E-02	5.343E-02	4.854E-03	-0.081
CD-109	6.205E-01		6.330E-01	1.106E+00	1.263E-01	0.561
AG-110M	-1.569E-02		3.169E-02	4.834E-02	4.418E-03	-0.325
SN-113	1.195E-02		3.457E-02	6.566E-02	6.554E-03	0.182
TE123M	-1.281E-03		2.666E-02	4.472E-02	4.035E-03	-0.029
SB-124	-1.105E-02		3.810E-02	6.028E-02	5.788E-03	-0.183
I-125	1.873E+00		9.096E-01	1.555E+00	1.736E-01	1.205
SB-125	-3.687E-02		6.596E-02	1.159E-01	1.164E-02	-0.318
SB-126	-1.797E-01		2.596E-01	4.369E-01	3.970E-02	-0.411
SN-126	5.523E-02		6.048E-02	1.056E-01	1.028E-02	0.523

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-127	-2.960E+00		1.593E+01	2.866E+01	2.610E+00	-0.103
I-129	2.423E-01	+	2.090E-01	1.903E-01	2.633E-02	1.273
I-131	-1.157E-01		2.997E-01	5.378E-01	6.768E-02	-0.215
BA-133	1.163E-02		3.562E-02	5.696E-02	9.521E-03	0.204
CS-134	-5.276E-03		2.758E-02	4.427E-02	4.253E-03	-0.119
CS-135	7.689E-02		1.299E-01	2.251E-01	4.019E-02	0.342
CS-136	-1.521E-02		1.910E-01	3.430E-01	3.342E-02	-0.044
CS-137	-1.344E-02		3.188E-02	5.238E-02	4.775E-03	-0.257
LA-138	-2.925E-03		3.483E-02	6.525E-02	5.565E-03	-0.045
CE-139	-1.126E-02		2.659E-02	4.348E-02	3.648E-03	-0.259
BA-140	2.438E-01		4.454E-01	8.501E-01	2.848E-01	0.287
LA-140	1.597E-02		1.144E-01	2.308E-01	2.047E-02	0.069
CE-141	-3.871E-02		7.625E-02	1.268E-01	3.188E-02	-0.305
CE-144	1.726E-03		1.795E-01	3.037E-01	3.417E-02	0.006
PM-144	5.786E-04		2.890E-02	5.264E-02	4.799E-03	0.011
PM-145	2.126E-01		2.252E-01	2.999E-01	1.961E-01	0.709
PM-146	-3.591E-04		5.307E-02	9.756E-02	9.721E-03	-0.004
ND-147	1.327E-01		1.141E+00	2.038E+00	2.024E-01	0.065
EU-152	5.877E-02		1.849E-01	3.625E-01	3.910E-02	0.162
GD-153	4.771E-03		9.065E-02	1.434E-01	1.540E-02	0.033
EU-154	-1.316E-03		9.433E-02	1.701E-01	1.546E-02	-0.008
EU-155	6.427E-02		7.312E-02	1.276E-01	1.229E-02	0.503
EU-156	5.177E-01		9.020E-01	1.778E+00	4.077E-01	0.291
HO-166M	1.185E-02		4.407E-02	8.352E-02	7.597E-03	0.142
HF-172	-2.333E-02		1.590E-01	2.671E-01	3.180E-02	-0.087
LU-172	-1.641E-01		1.197E+00	2.124E+00	2.085E-01	-0.077
LU-173	-6.158E-04		1.004E-01	1.673E-01	3.060E-02	-0.004
HF-175	-1.959E-02		4.392E-02	5.436E-02	7.897E-03	-0.360
LU-176	-1.169E-02		2.030E-02	3.190E-02	5.544E-03	-0.366
TA-182	2.228E-01		1.288E-01	2.711E-01	2.712E-02	0.822
IR-192	-5.699E-03		6.014E-02	1.095E-01	1.093E-02	-0.052
HG-203	2.074E-02		3.928E-02	6.835E-02	1.313E-02	0.303
BI-207	7.396E-04		2.311E-02	4.310E-02	4.220E-03	0.017
TL-208	3.238E-01	+	1.661E-01	2.221E-01	2.159E-02	1.458
BI-210M	-2.439E-02		4.460E-02	7.076E-02	1.215E-02	-0.345
PB-211	2.114E-02		7.170E-01	1.320E+00	1.295E-01	0.016
BI-212	2.134E-01		2.358E-01	4.639E-01	4.211E-02	0.460
RN-219	3.152E-01		3.169E-01	6.216E-01	6.088E-02	0.507
RA-223	-3.862E-01		5.654E-01	8.744E-01	1.410E-01	-0.442
RA-225	-7.923E-01		4.498E-01	6.341E-01	6.265E-02	-1.249
RA-226	2.799E-01		9.102E-01	1.379E+00	2.526E+00	0.203
TH-227	4.660E-01		2.180E-01	3.875E-01	5.598E-02	1.203
AC-228	4.532E-01	+	1.729E-01	3.034E-01	2.586E-02	1.494
TH-230	-1.029E+00		5.822E+00	9.868E+00	7.910E-01	-0.104
PA-231	3.274E-01		9.153E-01	1.462E+00	2.581E-01	0.224
TH-231	-1.536E-01		5.595E-01	8.829E-01	1.518E-01	-0.174
PA-233	8.986E-03		1.096E-01	1.847E-01	4.954E-02	0.049
PA-234	-3.496E-02		8.999E-02	1.484E-01	1.700E-02	-0.236

----- Non-Identified Nuclides -----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PA-234M	1.338E+00		3.149E+00	6.144E+00	5.638E-01	0.218
TH-234	2.346E-01		6.135E-01	1.113E+00	8.578E-02	0.211
U-235	-5.606E-02		1.820E-01	3.085E-01	5.688E-02	-0.182
NP-237	1.558E-01		1.773E-01	3.094E-01	2.978E-02	0.503
AM-241	-1.265E-01		6.887E-02	1.078E-01	8.061E-03	-1.173
CM-243	1.311E-02		1.433E-01	2.406E-01	4.551E-02	0.054

Summary of Nuclide Activity
Sample ID : 1303013-17

Page : 7
Acquisition date : 2-APR-2013 07:47:54

Total number of lines in spectrum 26
Number of unidentified lines 5
Number of lines tentatively identified by NID 21 80.77%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	9.466E+00	9.466E+00	1.380E+00	14.58	
PB-210	22.26Y	1.00	5.488E-01	5.502E-01	6.823E-01	124.02	
PB-212	1.41E+10Y	1.00	2.829E-01	2.829E-01	0.762E-01	26.92	
BI-214	1602.00Y	1.00	2.581E-01	2.581E-01	0.880E-01	34.10	
PB-214	1602.00Y	1.00	2.762E-01	2.762E-01	0.972E-01	35.21	
RA-224	1.41E+10Y	1.00	8.199E-01	8.199E-01	7.265E-01	88.61	
Total Activity :			1.165E+01	1.165E+01			

Nuclide Type : ACTIVATION

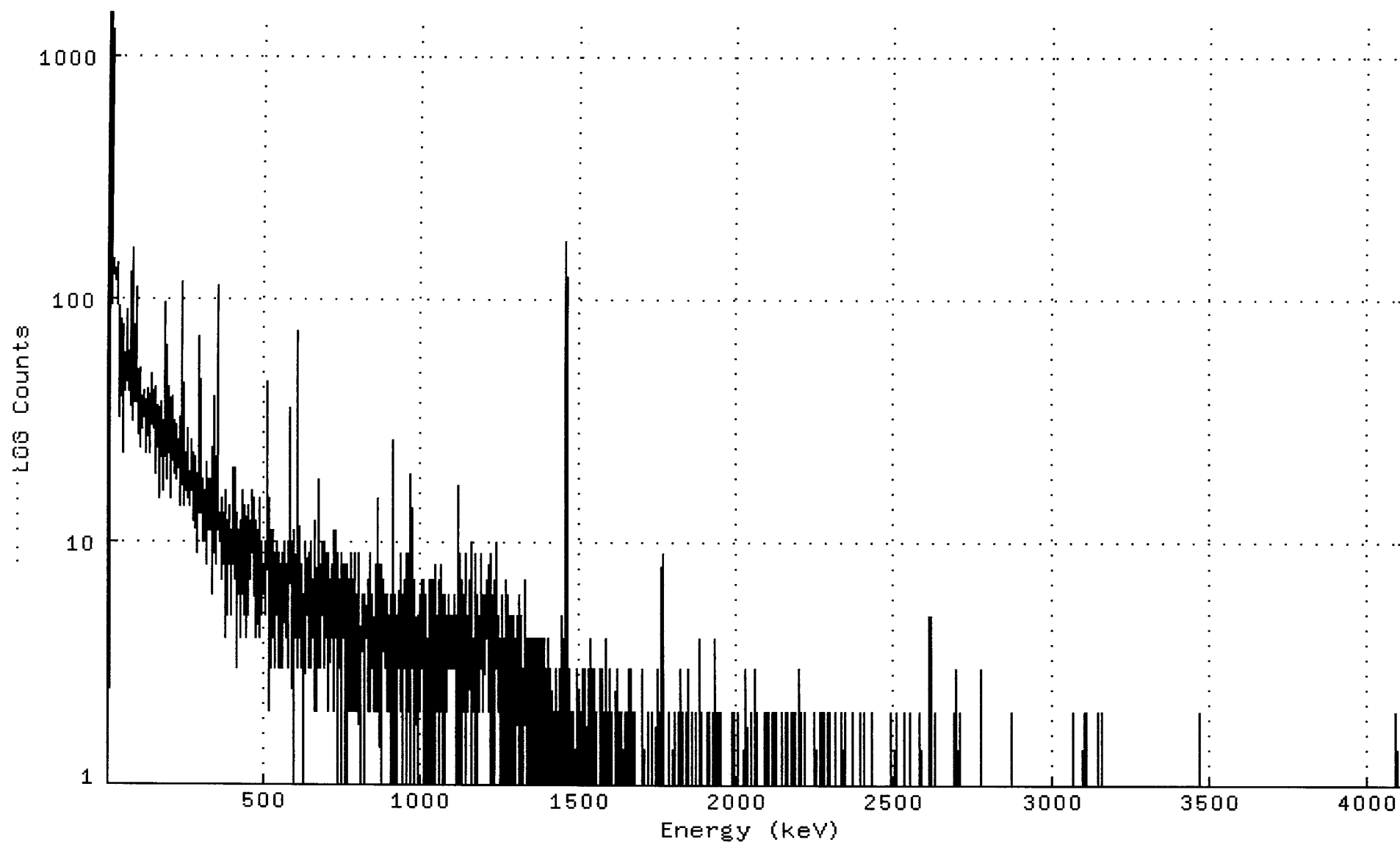
Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-243	7380.00Y	1.00	2.054E-01	2.054E-01	0.547E-01	26.63	
Total Activity :			2.054E-01	2.054E-01			

Grand Total Activity : 1.186E+01 1.186E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301317_GE2_GAS1202_190154.CNF;1
Title :
Sample Title: MQZ-BKGD-S-130303
Start Time: 2-APR-2013 07:47: Sample Time: 3-MAR-2013 00:00: Energy Offset: -1.16012E-01
Real Time : 0 01:00:00.82 Sample ID : 1303013-17 Energy Slope : 1.00003E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301317_GE2_GAS1202_1901

Channel

1:	0	1	1	0	6	85	716	1338
9:	1406	1499	717	1251	1018	108	94	127
17:	125	134	131	142	133	124	131	124
25:	124	122	117	124	138	133	129	106
33:	117	96	88	85	69	75	50	32
41:	52	39	48	39	40	81	74	23
49:	34	41	50	46	45	46	41	51
57:	59	54	45	46	64	57	89	73
65:	43	41	60	46	54	51	46	49
73:	36	76	126	71	160	78	31	40
81:	61	54	37	59	52	59	77	67
89:	51	66	64	82	110	49	37	41
97:	34	50	39	32	30	24	33	37
105:	45	51	26	37	39	33	29	35
113:	34	32	34	38	36	41	37	31
121:	30	23	38	33	33	27	29	40
129:	28	42	36	23	33	40	36	34
137:	32	30	48	31	33	36	37	41
145:	29	35	34	33	29	36	36	19
153:	43	40	29	28	28	32	36	32
161:	24	33	35	27	31	30	15	32
169:	23	28	28	28	37	16	31	25
177:	21	27	26	31	39	30	27	22
185:	84	95	42	18	25	29	38	27
193:	33	29	23	27	31	43	35	23
201:	29	28	20	15	30	26	28	29
209:	36	39	19	24	31	21	22	26
217:	29	18	20	23	30	24	25	24
225:	26	23	23	20	32	16	14	21
233:	21	15	28	22	17	114	116	22
241:	31	44	30	14	26	23	16	18
249:	23	19	21	16	24	22	18	20
257:	29	15	17	17	18	14	18	17
265:	22	26	20	22	16	23	23	19
273:	12	16	15	19	16	22	13	16
281:	18	17	14	9	12	19	15	12
289:	16	19	17	13	17	32	69	31
297:	15	13	19	20	18	13	18	10
305:	15	10	10	12	10	15	11	15
313:	16	10	21	18	12	14	8	18
321:	17	11	14	14	14	15	16	18
329:	18	11	15	11	12	13	15	6
337:	15	39	23	13	17	20	9	10
345:	8	11	22	13	12	16	59	111
353:	21	15	12	10	10	11	13	10
361:	10	15	10	7	11	7	12	11
369:	10	13	12	9	10	8	16	15
377:	4	14	15	11	8	10	12	5
385:	12	5	14	11	12	14	12	8
393:	8	11	11	5	10	9	9	10
401:	20	11	8	19	14	8	10	20
409:	13	7	11	11	3	8	7	13
417:	8	11	8	8	10	6	12	7
425:	11	5	4	8	16	6	7	7

433:	11	16	12	8	5	12	14	13
441:	12	5	5	9	11	4	12	14
449:	5	5	9	11	11	9	7	10
457:	12	10	11	13	13	12	16	9
465:	13	9	15	6	6	13	7	5
473:	7	10	12	4	7	11	9	8
481:	11	6	5	4	13	15	12	7
489:	8	6	6	10	7	5	10	6
497:	6	8	6	6	8	5	10	5
505:	8	7	6	13	21	41	45	22
513:	8	7	2	12	15	6	4	5
521:	8	5	6	11	3	7	5	4
529:	7	11	10	3	6	8	7	8
537:	8	10	7	7	5	7	8	3
545:	9	4	5	5	9	5	8	5
553:	7	4	7	3	5	5	9	8
561:	4	3	7	5	7	7	10	10
569:	6	7	5	8	7	4	7	7
577:	6	3	10	9	9	29	35	18
585:	10	11	4	8	6	6	10	6
593:	1	9	9	5	4	11	7	8
601:	6	6	8	4	8	3	9	25
609:	73	22	6	7	10	6	8	4
617:	8	5	8	8	5	3	5	1
625:	6	3	5	1	8	10	3	6
633:	7	5	7	7	7	6	6	5
641:	8	9	5	7	5	5	3	7
649:	5	10	3	8	8	6	7	5
657:	4	7	4	5	12	6	2	7
665:	12	5	7	4	4	2	7	5
673:	6	18	5	7	3	3	4	8
681:	4	7	6	5	5	6	5	6
689:	10	3	7	5	10	5	8	7
697:	9	4	9	7	6	7	9	6
705:	8	6	2	5	7	4	6	5
713:	6	6	5	4	8	4	4	5
721:	2	11	3	6	8	10	9	4
729:	11	6	8	4	4	1	2	9
737:	4	5	7	6	5	4	5	3
745:	5	1	1	9	5	3	6	7
753:	5	8	4	4	8	3	1	3
761:	7	6	1	4	6	8	3	7
769:	6	4	2	5	7	3	7	2
777:	4	9	7	6	7	6	3	4
785:	4	2	5	3	2	5	9	5
793:	6	5	6	6	3	2	3	4
801:	4	9	4	3	0	2	4	4
809:	2	4	5	6	4	5	4	6
817:	2	1	5	4	3	0	6	5
825:	5	4	5	4	5	5	2	4
833:	7	2	2	6	5	2	3	9
841:	3	3	3	3	3	3	6	4
849:	3	2	4	2	2	4	2	4
857:	4	8	3	15	7	2	8	7
865:	5	6	8	4	8	3	2	0
873:	7	8	2	6	3	4	5	7
881:	5	4	7	4	5	3	6	4
889:	4	4	6	5	6	2	4	2
897:	4	5	5	2	5	3	1	6
905:	5	3	3	6	14	23	26	10

913:	1	4	2	0	3	2	2	6
921:	3	5	4	2	0	5	4	3
929:	6	3	4	5	8	9	4	6
937:	2	3	2	0	3	3	2	6
945:	3	7	7	7	6	6	3	4
953:	1	7	4	9	2	2	5	5
961:	9	8	3	11	5	1	5	19
969:	10	5	4	5	5	3	5	4
977:	7	2	1	6	4	3	4	3
985:	3	3	1	5	4	2	2	5
993:	5	2	2	2	3	6	4	4
1001:	6	5	3	5	7	4	1	7
1009:	3	4	4	5	1	3	6	5
1017:	2	4	3	3	3	4	0	1
1025:	7	1	1	6	2	4	3	7
1033:	1	6	3	1	4	7	1	4
1041:	2	7	0	8	5	6	4	4
1049:	5	2	2	5	4	1	4	3
1057:	4	7	4	7	4	2	2	8
1065:	5	4	3	0	2	6	3	6
1073:	1	1	3	1	6	4	5	2
1081:	3	4	4	4	4	3	5	4
1089:	6	4	3	5	4	3	4	5
1097:	4	5	3	4	4	3	3	3
1105:	6	3	4	6	3	1	3	3
1113:	5	3	2	2	0	4	11	17
1121:	4	5	1	9	6	5	5	1
1129:	6	4	7	3	6	6	4	2
1137:	2	5	4	3	5	9	0	3
1145:	3	5	5	4	5	2	3	5
1153:	4	5	6	7	4	5	10	6
1161:	1	5	3	3	4	3	3	2
1169:	7	0	2	9	8	3	5	6
1177:	3	1	4	4	2	4	5	4
1185:	5	5	5	4	3	4	3	4
1193:	9	3	3	6	5	5	2	4
1201:	5	6	6	6	4	6	7	4
1209:	5	4	4	6	5	5	8	3
1217:	2	3	3	6	6	9	1	3
1225:	5	4	6	1	5	4	7	1
1233:	6	4	4	10	4	6	5	3
1241:	4	3	5	2	2	4	4	3
1249:	0	4	3	3	0	6	4	1
1257:	2	3	0	4	3	1	4	3
1265:	3	1	1	2	7	2	3	2
1273:	5	1	2	4	6	3	1	5
1281:	3	5	0	3	3	3	0	5
1289:	2	2	4	4	5	3	0	0
1297:	0	4	2	4	2	1	3	5
1305:	2	2	5	2	2	6	4	2
1313:	0	2	2	5	3	3	3	1
1321:	3	2	2	1	2	1	3	7
1329:	2	3	3	6	2	1	4	2
1337:	1	0	4	1	3	1	2	3
1345:	3	2	4	1	3	1	0	0
1353:	2	4	1	3	3	4	1	4
1361:	2	1	1	0	1	1	4	2
1369:	1	2	1	0	4	1	1	1
1377:	4	4	4	1	1	3	0	4
1385:	0	2	1	1	1	1	2	4

1393:	3	0	3	2	1	2	0	4
1401:	1	2	4	0	1	1	3	3
1409:	2	2	3	2	2	0	0	2
1417:	2	1	1	0	0	0	2	2
1425:	0	0	2	1	3	1	0	2
1433:	0	1	1	3	0	1	3	0
1441:	2	2	1	2	1	5	2	1
1449:	4	2	2	2	2	2	0	1
1457:	5	13	84	172	89	25	4	0
1465:	1	1	0	1	2	1	3	2
1473:	1	0	1	2	2	2	1	0
1481:	1	0	1	2	0	1	0	0
1489:	0	1	1	2	0	1	1	3
1497:	2	0	1	2	0	0	1	1
1505:	0	0	2	1	1	3	3	0
1513:	2	2	1	1	2	2	1	3
1521:	1	1	1	0	0	0	0	0
1529:	0	1	3	1	3	2	4	2
1537:	1	1	1	0	0	3	1	1
1545:	3	1	2	2	0	0	0	2
1553:	0	0	1	1	1	1	1	0
1561:	1	0	1	1	1	1	3	0
1569:	3	1	3	0	1	0	1	1
1577:	0	1	0	1	2	1	0	0
1585:	0	2	4	1	0	1	0	1
1593:	2	2	1	0	0	3	0	0
1601:	0	1	2	2	1	0	1	0
1609:	1	1	0	0	1	1	1	1
1617:	2	3	2	2	1	0	1	0
1625:	1	1	0	2	2	2	0	0
1633:	1	0	2	1	0	1	0	0
1641:	1	0	0	1	0	2	0	1
1649:	0	1	2	0	0	0	1	0
1657:	1	1	2	3	2	0	0	1
1665:	0	3	0	0	0	0	1	2
1673:	2	0	2	0	0	1	0	0
1681:	0	1	0	0	0	0	1	0
1689:	1	1	1	0	1	1	0	0
1697:	1	2	0	3	1	2	1	0
1705:	1	1	1	1	0	1	0	1
1713:	0	0	1	0	2	0	1	0
1721:	0	0	0	0	1	1	1	2
1729:	0	2	1	1	1	0	0	0
1737:	1	0	1	0	1	0	0	1
1745:	0	3	0	1	0	0	0	1
1753:	1	0	2	0	2	1	0	0
1761:	0	4	7	9	8	2	1	0
1769:	1	1	0	0	1	0	1	1
1777:	1	0	1	0	1	0	0	0
1785:	1	2	0	1	0	0	1	1
1793:	0	1	0	0	0	0	1	2
1801:	2	0	0	2	0	1	1	1
1809:	0	1	1	0	1	0	0	2
1817:	0	1	0	0	0	0	0	3
1825:	1	0	0	0	2	0	1	0
1833:	1	1	0	0	0	0	0	1
1841:	2	0	1	1	0	3	0	1
1849:	1	0	0	0	0	1	0	1
1857:	0	0	2	1	0	1	1	0
1865:	1	0	1	0	2	0	0	0

1873:	1	1	1	1	1	0	1	0
1881:	0	1	0	4	0	1	0	0
1889:	0	1	0	0	1	0	0	1
1897:	1	0	1	0	0	0	0	1
1905:	1	0	0	2	2	0	0	0
1913:	0	0	0	0	1	1	1	1
1921:	0	0	0	2	2	0	0	0
1929:	1	1	4	0	0	1	1	1
1937:	0	2	1	2	0	1	1	2
1945:	0	0	0	2	1	0	0	1
1953:	0	0	0	0	0	0	0	0
1961:	0	1	0	0	1	1	0	0
1969:	1	0	0	1	0	0	0	1
1977:	0	0	1	0	0	0	0	2
1985:	2	0	0	0	0	0	2	0
1993:	0	1	0	0	0	0	0	1
2001:	1	2	0	1	2	0	0	0
2009:	1	0	0	0	0	0	0	1
2017:	0	0	0	0	1	0	0	1
2025:	2	0	0	0	1	3	0	0
2033:	0	1	0	1	0	0	0	1
2041:	1	1	1	0	0	2	1	1
2049:	0	0	0	0	0	0	0	2
2057:	0	3	1	1	2	0	0	0
2065:	0	0	0	0	1	1	0	0
2073:	0	1	0	0	0	0	1	0
2081:	1	0	0	0	0	1	2	1
2089:	1	0	1	2	1	2	1	0
2097:	0	1	1	0	1	2	1	1
2105:	0	0	1	0	1	1	0	0
2113:	0	2	1	1	2	0	1	0
2121:	1	1	0	1	2	0	1	0
2129:	1	1	1	0	0	0	0	1
2137:	0	0	0	0	2	0	1	0
2145:	0	0	0	1	0	0	0	0
2153:	0	1	1	0	2	1	0	2
2161:	2	0	0	0	0	0	0	1
2169:	0	1	2	0	2	0	0	1
2177:	1	0	2	0	0	0	0	2
2185:	0	1	0	1	0	0	1	1
2193:	0	0	1	0	0	0	0	3
2201:	1	2	2	2	0	0	0	0
2209:	0	0	0	0	1	0	2	0
2217:	0	0	0	0	0	1	0	0
2225:	0	0	0	0	0	0	0	1
2233:	0	0	0	0	0	0	0	0
2241:	0	0	0	0	1	2	1	2
2249:	0	0	1	1	0	1	0	0
2257:	0	0	0	0	1	2	1	0
2265:	2	1	1	1	0	0	0	2
2273:	2	0	0	0	0	1	0	1
2281:	0	1	0	0	0	1	1	0
2289:	1	1	2	0	0	2	0	1
2297:	0	1	0	0	0	0	1	1
2305:	1	0	0	1	0	1	2	0
2313:	0	1	0	1	0	0	0	1
2321:	1	1	0	0	1	0	0	1
2329:	0	2	2	1	0	0	1	0
2337:	0	0	1	2	1	2	1	0
2345:	0	0	0	0	0	0	1	1

2353:	0	0	0	1	1	0	0	1
2361:	1	1	1	1	0	0	2	0
2369:	1	0	0	0	0	0	1	0
2377:	0	0	0	1	1	1	1	0
2385:	1	0	0	0	0	1	0	1
2393:	2	0	1	1	0	1	1	0
2401:	0	1	0	0	2	0	0	0
2409:	0	1	0	0	0	0	0	0
2417:	0	1	0	0	1	1	0	0
2425:	0	2	0	0	0	1	1	0
2433:	1	0	1	0	0	0	1	0
2441:	0	1	0	1	0	0	0	1
2449:	0	0	1	0	0	0	0	0
2457:	1	0	0	0	0	0	0	0
2465:	0	0	0	0	1	0	1	0
2473:	1	0	0	0	0	1	0	1
2481:	0	0	0	1	1	0	2	0
2489:	0	0	1	0	0	1	1	0
2497:	1	1	0	1	0	0	0	2
2505:	0	0	1	0	0	1	0	1
2513:	0	0	0	0	0	0	0	0
2521:	0	0	0	0	1	0	0	1
2529:	2	0	0	2	0	0	0	0
2537:	0	1	0	0	0	0	0	0
2545:	0	0	0	0	0	2	1	0
2553:	0	1	0	0	0	0	0	1
2561:	0	0	0	0	0	0	1	1
2569:	0	0	0	0	0	0	0	1
2577:	0	0	0	1	0	2	0	0
2585:	0	0	0	0	0	1	0	0
2593:	0	0	1	0	0	0	0	0
2601:	0	1	0	1	0	0	0	0
2609:	1	0	0	5	5	5	1	1
2617:	0	0	0	0	0	0	0	0
2625:	0	1	2	0	2	1	0	1
2633:	0	0	1	0	0	0	0	0
2641:	0	0	0	1	0	1	0	0
2649:	1	0	0	0	0	0	0	1
2657:	0	1	0	0	1	0	0	0
2665:	0	0	0	0	0	0	1	0
2673:	0	0	1	0	1	0	0	0
2681:	0	0	0	0	0	1	0	1
2689:	0	1	2	0	0	0	3	1
2697:	0	1	0	0	0	0	1	2
2705:	0	1	1	0	0	0	0	0
2713:	0	1	0	0	0	0	0	0
2721:	0	0	0	0	0	1	0	1
2729:	0	0	1	0	1	1	1	0
2737:	0	0	0	0	0	0	0	0
2745:	0	0	0	0	0	0	0	1
2753:	0	0	1	0	1	0	0	0
2761:	0	0	0	1	1	0	1	1
2769:	0	0	0	1	0	3	0	0
2777:	0	0	1	1	0	0	0	0
2785:	0	0	0	1	0	1	0	1
2793:	1	0	0	0	0	0	0	0
2801:	1	0	1	0	0	0	0	1
2809:	0	0	0	0	0	0	1	0
2817:	0	0	0	0	0	0	0	0
2825:	1	0	0	0	1	0	0	0

2833:	0	0	1	1	0	0	0	0
2841:	1	0	0	0	0	0	0	0
2849:	0	1	1	0	0	0	1	0
2857:	0	0	1	0	0	1	0	1
2865:	0	0	0	0	0	2	0	2
2873:	0	1	0	0	0	0	0	0
2881:	0	1	0	1	0	0	1	0
2889:	0	0	1	0	0	0	0	0
2897:	0	0	0	1	0	0	0	0
2905:	1	0	0	1	0	0	0	0
2913:	0	0	1	0	0	0	0	0
2921:	0	0	0	0	1	0	0	0
2929:	0	0	0	0	0	0	0	0
2937:	0	1	0	0	0	0	0	0
2945:	0	0	0	1	0	0	0	0
2953:	0	0	0	0	0	0	0	0
2961:	0	0	0	1	0	0	0	0
2969:	1	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	1	0
2985:	0	0	0	0	0	1	1	0
2993:	0	0	0	0	1	0	0	0
3001:	0	0	0	0	1	0	0	1
3009:	0	0	0	0	0	1	0	0
3017:	0	1	0	0	0	0	0	0
3025:	0	1	0	0	1	0	0	1
3033:	0	0	0	0	0	1	0	0
3041:	0	0	0	0	0	0	0	0
3049:	0	0	0	0	0	0	0	0
3057:	0	0	0	0	0	0	1	0
3065:	0	2	0	0	0	0	0	0
3073:	0	0	0	0	0	0	0	1
3081:	0	0	0	0	0	0	0	0
3089:	0	0	0	0	1	1	0	0
3097:	0	0	2	0	0	0	1	0
3105:	1	2	0	0	0	0	0	0
3113:	0	0	0	0	0	0	0	0
3121:	0	0	1	1	0	0	0	0
3129:	0	0	0	0	0	1	0	0
3137:	0	0	1	0	0	2	0	0
3145:	0	0	0	0	0	0	1	0
3153:	0	2	0	0	0	1	0	0
3161:	0	0	0	1	1	0	0	0
3169:	0	0	0	1	0	0	1	0
3177:	1	0	0	1	0	0	0	0
3185:	0	0	0	0	0	1	0	0
3193:	0	1	0	0	0	0	0	0
3201:	0	0	1	0	0	0	0	0
3209:	0	0	0	0	0	0	0	0
3217:	0	0	0	0	0	0	1	0
3225:	0	1	0	0	0	0	0	0
3233:	0	0	1	0	0	0	0	0
3241:	0	1	0	0	0	0	0	0
3249:	0	0	0	0	0	0	1	1
3257:	0	0	0	0	0	0	0	0
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	0	0	1	0	1	0	0
3297:	0	0	0	0	0	0	0	0
3305:	0	0	0	1	0	0	1	0

3313:	1	0	0	0	0	0	1	0
3321:	1	0	1	0	0	0	0	0
3329:	0	0	0	0	0	0	0	0
3337:	0	0	0	0	0	0	0	0
3345:	0	0	0	0	1	0	0	0
3353:	1	0	0	1	1	0	0	0
3361:	0	0	0	0	0	0	0	0
3369:	0	0	0	0	0	0	1	0
3377:	0	0	0	1	0	0	0	0
3385:	0	0	0	0	0	0	0	0
3393:	0	0	0	0	1	1	0	1
3401:	0	1	0	0	0	0	0	0
3409:	0	0	0	0	1	0	1	1
3417:	0	0	0	0	0	1	0	0
3425:	0	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	1	0	0	0	0	0	0
3449:	0	0	0	0	0	0	0	0
3457:	0	0	0	0	0	0	0	0
3465:	0	0	2	0	0	0	0	0
3473:	0	0	1	0	0	0	0	0
3481:	0	1	0	0	0	0	0	0
3489:	0	0	0	0	1	1	1	0
3497:	0	0	1	0	1	0	0	0
3505:	0	0	0	0	0	0	0	0
3513:	0	1	1	0	1	0	0	0
3521:	0	0	0	0	0	0	0	0
3529:	0	0	0	0	0	0	1	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	1
3553:	0	0	0	0	0	1	0	0
3561:	0	0	0	1	0	1	0	1
3569:	0	0	0	0	0	0	0	0
3577:	0	0	0	1	0	0	0	0
3585:	0	0	1	0	0	0	0	0
3593:	0	0	0	0	0	0	0	0
3601:	0	1	0	0	0	0	0	0
3609:	0	0	0	0	0	0	0	0
3617:	0	0	1	0	1	0	0	0
3625:	0	0	1	1	0	0	0	0
3633:	0	0	0	0	0	0	0	0
3641:	0	0	0	1	1	0	0	1
3649:	0	0	0	0	0	0	0	0
3657:	1	0	0	0	0	0	0	0
3665:	0	0	0	0	1	0	0	0
3673:	1	0	0	1	0	0	0	0
3681:	1	1	0	0	0	0	0	0
3689:	1	0	0	0	0	0	0	0
3697:	0	0	0	1	0	0	0	0
3705:	0	1	0	0	0	0	0	0
3713:	0	0	0	0	1	0	0	0
3721:	1	0	0	0	0	0	0	0
3729:	0	0	0	0	0	0	0	1
3737:	0	1	1	0	0	0	0	0
3745:	0	0	0	0	0	0	0	0
3753:	0	0	0	1	0	0	0	0
3761:	0	0	0	0	0	0	0	0
3769:	0	0	1	0	1	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	0	0	0	0	0	0	0	0

3793:	0	0	1	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	0	1	0	0	0	0	0
3817:	0	0	0	0	0	0	0	0
3825:	1	0	0	0	0	0	0	1
3833:	0	0	1	0	0	0	0	0
3841:	1	0	0	0	1	0	0	0
3849:	0	0	0	0	0	1	0	0
3857:	0	0	0	0	1	0	0	0
3865:	0	0	0	1	0	0	0	0
3873:	0	0	0	0	0	0	1	0
3881:	0	1	1	0	0	0	0	0
3889:	0	0	0	1	0	0	0	0
3897:	1	0	1	0	0	0	0	0
3905:	0	0	0	0	0	0	0	0
3913:	0	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	1	1	0	0	0
3945:	0	0	1	0	0	0	0	0
3953:	0	0	0	0	0	0	0	0
3961:	0	0	1	0	0	0	0	0
3969:	0	0	1	0	0	0	0	0
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	0	0	1
3993:	0	0	1	0	0	0	0	0
4001:	0	0	0	0	0	0	0	0
4009:	1	0	1	0	0	0	0	0
4017:	0	0	0	0	1	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	0	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	1	0
4057:	0	0	0	0	0	1	0	0
4065:	0	0	0	0	1	0	0	1
4073:	0	0	0	0	0	1	1	0
4081:	0	0	0	0	0	2	0	0
4089:	0	0	0	0	0	0	0	0

Sample ID : 1303013-18

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Acquisition date : 2-APR-2013 08:00:00

VAX/VMS Peak Search Report Generated 2-APR-2013 09:00:40.34

Configuration : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301318_GE1_GAS1202_190155.
Analyses by : PEAK V16.9 ENBACK V1.6 PEAKEFF V2.2
Client ID : MQZ-BKGD-W-130303
Deposition Date :
Sample Date : 3-MAR-2013 00:00:00. Acquisition date : 2-APR-2013 08:00:00.
Sample ID : 1303013-18 Sample Quantity : 6.06640E+02 GRAM
Sample type : SOLID Sample Geometry : 0
Detector name : GE1 Detector Geometry: GAS-1202
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:00.65 0.0%
Start channel : 5 End channel : 4096
Sensitivity : 2.50000 Gaussian : 15.00000
Critical level : Yes

Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	76.35*	259	483	3.75	76.58	72	10	34.5		
1	89.62	51	227	1.62	89.85	86	12	97.9	8.52E+00	
0	186.10*	62	231	1.50	186.32	182	9	96.5		RA-226
1	235.64	26	54	1.77	235.86	234	11	81.9	3.28E+01	
1	238.91*	223	83	1.77	239.13	234	11	18.3		PB-212
1	241.66*	69	74	1.77	241.88	234	11	60.3		RA-224
0	295.15*	62	117	1.89	295.36	292	8	67.4		PB-214
0	307.71	32	67	3.46	307.92	304	7	93.4		
3	323.34	18	28	2.22	323.55	322	12	86.5	1.68E+00	RA-223
3	327.44	45	68	2.22	327.66	322	12	69.2		
0	337.42*	56	97	1.74	337.63	334	9	69.6		
0	351.99*	154	90	1.50	352.20	347	9	28.2		PB-214
0	405.02	24	56	4.60	405.23	401		8116.5		
0	425.05	18	43	2.78	425.26	422		7129.4		
0	463.72	21	43	1.51	463.93	461		6110.5		
0	583.28*	61	40	1.79	583.47	580	7	45.0		TL-208
0	597.16	17	35	1.29	597.35	594		7125.2		
0	610.04*	92	68	1.86	610.23	604	10	40.5		BI-214
0	683.95	17	25	1.89	684.14	681		8111.1		
0	700.82	25	39	3.15	701.01	697		9100.3		
0	726.70	24	35	3.85	726.88	722	10	103.7		BI-212
0	741.28	18	16	3.77	741.47	738	7	88.9		
0	796.52	18	17	3.48	796.70	794	7	87.8		
4	806.82	15	11	1.91	807.00	800	17	101.5	2.90E+00	
4	811.54	18	13	2.80	811.72	800	17	90.5		LU-172 CO-58
0	839.69	36	45	8.27	839.87	833	14	86.2		
0	911.40*	73	31	2.24	911.57	905	14	40.7		LU-172
0	920.75	12	17	1.44	920.92	918		8126.2		
0	970.83	24	36	3.23	971.00	965	10	104.5		
0	991.13	18	13	3.48	991.29	987	8	87.6		
0	1095.16	35	10	4.05	1095.32	1090	10	47.5		LU-172
0	1103.46	10	10	2.80	1103.61	1101		6120.6		
0	1121.02*	43	29	2.31	1121.18	1116	12	59.8		BI-214
0	1239.92	18	34	4.66	1240.07	1236		8121.6		
0	1292.44	14	10	1.92	1292.58	1289	8	91.9		

AG
4/2/13

0374

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
0	1331.03	13	15	3.05	1331.17	1325	10122.2			
0	1408.88	13	12	5.16	1409.02	1403	10117.7			
0	1461.02*	440	15	1.93	1461.15	1455	12	10.3		K-40
0	1603.94	8	1	1.38	1604.06	1601	6	88.1		
0	1620.66	9	7	5.10	1620.78	1614	10138.2			BI-212
0	1627.16	5	1	1.26	1627.28	1625	5110.0			
0	1660.80	13	0	5.59	1660.92	1657	8	55.5		
0	1764.80*	30	5	2.46	1764.91	1761	9	46.2		BI-214
0	1873.32	7	0	2.22	1873.43	1870	7	75.6		
0	1976.24	6	0	1.47	1976.33	1973	6	81.6		
0	2063.58	6	0	1.92	2063.67	2060	7	81.6		
0	2103.41	9	1	1.89	2103.50	2101	5	76.8		
0	2540.14	5	0	2.31	2540.20	2536	7	89.4		
0	2614.29*	29	2	3.04	2614.35	2609	10	45.6		TL-208

Summary of Nuclide Activity
Sample ID : 1303013-18

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Acquisition date : 2-APR-2013 08:00:00

Total number of lines in spectrum 49
Number of unidentified lines 19
Number of lines tentatively identified by NID 30 61.22%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.011E+01	1.011E+01	0.148E+01	14.66	
TL-208	1.41E+10Y	1.00	2.560E-01	2.560E-01	0.849E-01	33.16	
BI-212	1.41E+10Y	1.00	3.187E-01	3.187E-01	2.870E-01	90.03	
PB-212	1.41E+10Y	1.00	3.011E-01	3.011E-01	0.870E-01	28.89	
BI-214	1602.00Y	1.00	3.028E-01	3.028E-01	0.907E-01	29.97	
PB-214	1602.00Y	1.00	2.924E-01	2.924E-01	0.922E-01	31.53	
RA-223	3.28E+04Y	1.00	3.524E-01	3.524E-01	3.171E-01	89.97	
RA-224	1.41E+10Y	1.00	1.054E+00	1.054E+00	0.680E+00	64.48	
RA-226	1602.00Y	1.00	9.810E-01	9.810E-01	20.33E-01	207.24	
Total Activity :			1.397E+01	1.397E+01			

Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-58	70.80D	1.35	2.849E-02	3.835E-02	3.490E-02	91.00	
LU-172	6.70D	23.1	1.108E-01	2.560E+00	1.240E+00	48.45	
Total Activity :			1.393E-01	2.598E+00			

Grand Total Activity : 1.411E+01 1.656E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/GRAM	pCi/GRAM	%Error	
K-40	1460.81	10.67*	5.045E-01	1.011E+01	1.011E+01	14.66	OK
Final Mean for 1 Valid Peaks = 1.011E+01+/- 1.481E+00 (14.66%)							
TL-208	583.14	30.22*	1.055E+00	2.356E-01	2.356E-01	46.27	OK
	860.37	4.48	7.641E-01	-----	Line Not Found	-----	Absent
	2614.66	35.85	3.498E-01	2.875E-01	2.875E-01	47.08	OK
Final Mean for 2 Valid Peaks = 2.560E-01+/- 8.490E-02 (33.16%)							
BI-212	727.17	11.80*	8.782E-01	2.846E-01	2.846E-01	104.22	OK
	1620.62	2.75	4.685E-01	8.196E-01	8.196E-01	138.57	OK
Final Mean for 2 Valid Peaks = 3.187E-01+/- 2.870E-01 (90.03%)							
PB-212	238.63	44.60*	2.057E+00	3.011E-01	3.011E-01	28.89	OK
	300.09	3.41	1.767E+00	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 3.011E-01+/- 8.696E-02 (28.89%)							
BI-214	609.31	46.30*	1.017E+00	2.425E-01	2.425E-01	41.85	OK
	1120.29	15.10	6.174E-01	5.722E-01	5.722E-01	60.49	OK
	1764.49	15.80	4.419E-01	5.287E-01	5.288E-01	47.31	OK
	2204.22	4.98	3.841E-01	-----	Line Not Found	-----	Absent
Final Mean for 3 Valid Peaks = 3.028E-01+/- 9.075E-02 (29.97%)							
PB-214	295.21	19.19	1.787E+00	2.228E-01	2.228E-01	73.43	OK
	351.92	37.19*	1.574E+00	3.248E-01	3.248E-01	34.36	OK
Final Mean for 2 Valid Peaks = 2.924E-01+/- 9.219E-02 (31.53%)							
RA-223	323.87	3.88*	1.674E+00	3.524E-01	3.524E-01	89.97	OK
Final Mean for 1 Valid Peaks = 3.524E-01+/- 3.171E-01 (89.97%)							
RA-224	240.98	3.95*	2.045E+00	1.054E+00	1.054E+00	64.48	OK
Final Mean for 1 Valid Peaks = 1.054E+00+/- 6.795E-01 (64.48%)							
RA-226	186.21	3.28*	2.369E+00	9.810E-01	9.810E-01	207.24	OK
Final Mean for 1 Valid Peaks = 9.810E-01+/- 2.033E+00 (207.24%)							

Nuclide Type: ACTIVATION

Nuclide	Energy	%Abn	%Eff	Uncorrected Decay Corr 2-Sigma			Status
				pCi/GRAM	pCi/GRAM	%Error	
CO-58	810.76	99.40*	8.025E-01	2.849E-02	3.835E-02	91.00	OK
Final Mean for 1 Valid Peaks = 3.835E-02+/- 3.490E-02 (91.00%)							
LU-172	181.53	20.60	2.400E+00	-----	Line Not Found	-----	Absent
	810.06	16.63	8.031E-01	1.702E-01	3.933E+00	91.00	<<WM Interf
	912.12	15.25	7.284E-01	8.163E-01	1.886E+01	41.81	<<WM N-Sigma
	1093.66	62.50*	6.293E-01	1.108E-01	2.560E+00	48.45	OK

Final Mean for 1 Valid Peaks = 2.560E+00+/- 1.240E+00 (48.45%)

Flag: "*" = Keyline

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	1.011E+01	1.481E+00	4.288E-01	4.144E-02	23.575
CO-58	3.835E-02	3.490E-02	4.053E-02	3.695E-03	0.946
LU-172	2.560E+00	1.240E+00	1.127E+00	9.539E-02	2.271
TL-208	2.560E-01	8.490E-02	1.150E-01	1.168E-02	2.226
BI-212	3.187E-01	2.870E-01	3.269E-01	3.030E-02	0.975
PB-212	3.011E-01	8.696E-02	6.410E-02	1.412E-02	4.696
BI-214	3.028E-01	9.075E-02	8.273E-02	8.196E-03	3.660
PB-214	2.924E-01	9.219E-02	8.175E-02	1.577E-02	3.577
RA-223	3.524E-01	3.171E-01	7.663E-01	1.876E-01	0.460
RA-224	1.054E+00	6.795E-01	7.286E-01	1.640E-01	1.446
RA-226	9.810E-01	2.033E+00	8.338E-01	1.529E+00	1.177

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	1.931E-01		2.618E-01	5.112E-01	5.472E-02	0.378
NA-22	-4.465E-03		2.805E-02	5.057E-02	4.519E-03	-0.088
AL-26	1.165E-03		1.998E-02	4.024E-02	3.676E-03	0.029
TI-44	-4.473E-02		2.306E-02	3.100E-02	2.409E-03	-1.443
SC-46	8.205E-03		3.019E-02	5.761E-02	5.043E-03	0.142
V-48	3.082E-02		8.291E-02	1.511E-01	1.310E-02	0.204
CR-51	5.983E-02		4.134E-01	6.425E-01	1.624E-01	0.093
MN-54	1.053E-02		2.890E-02	5.014E-02	4.517E-03	0.210
CO-56	-2.699E-02		3.635E-02	5.242E-02	4.697E-03	-0.515
CO-57	-5.833E-03		2.110E-02	3.455E-02	3.839E-03	-0.169
FE-59	6.649E-02		6.778E-02	1.254E-01	1.149E-02	0.530
CO-60	-7.258E-03		2.806E-02	5.113E-02	4.190E-03	-0.142
ZN-65	-3.350E-02		7.313E-02	1.095E-01	9.210E-03	-0.306
SE-75	2.000E-02		3.618E-02	6.191E-02	1.716E-02	0.323
RB-82	-1.482E-01		3.749E-01	6.612E-01	6.077E-02	-0.224
RB-83	5.559E-03		5.109E-02	9.540E-02	1.602E-02	0.058
KR-85	-4.478E+00		6.080E+00	1.036E+01	1.098E+00	-0.432
SR-85	-2.694E-02		3.657E-02	6.229E-02	6.604E-03	-0.432
Y-88	7.909E-03		2.419E-02	5.207E-02	4.730E-03	0.152
NB-93M	-1.572E+00		5.169E-01	2.687E-01	6.500E-02	-5.853
NB-94	-1.825E-02		2.225E-02	3.659E-02	3.238E-03	-0.499
NB-95	4.593E-02		4.473E-02	8.986E-02	8.284E-03	0.511
ZR-95	1.956E-03		4.886E-02	9.185E-02	9.232E-03	0.021
RU-103	-3.804E-03		3.740E-02	6.809E-02	1.055E-02	-0.056
RU-106	1.802E-02		2.025E-01	3.802E-01	5.371E-02	0.047
AG-108M	1.096E-02		2.620E-02	4.609E-02	4.274E-03	0.238
CD-109	4.603E-01		5.676E-01	9.704E-01	1.094E-01	0.474
AG-110M	-1.350E-02		2.585E-02	4.487E-02	4.181E-03	-0.301
SN-113	7.074E-04		2.953E-02	5.479E-02	5.926E-03	0.013
TE123M	-2.167E-02		2.412E-02	3.753E-02	3.553E-03	-0.577
SB-124	-6.964E-03		4.406E-02	5.593E-02	5.579E-03	-0.125
I-125	-1.966E-01		4.328E-01	7.179E-01	6.746E-02	-0.274

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	-2.775E-02		6.029E-02	9.494E-02	1.029E-02	-0.292
SB-126	4.984E-02		2.334E-01	4.009E-01	3.717E-02	0.124
SN-126	2.285E-02		5.341E-02	9.026E-02	8.621E-03	0.253
SB-127	1.515E+01	+	1.691E+01	2.563E+01	2.378E+00	0.591
I-129	-4.754E-02		4.166E-02	6.581E-02	7.227E-03	-0.722
I-131	1.525E-01		2.674E-01	5.143E-01	8.600E-02	0.297
BA-133	-1.370E-02		2.980E-02	4.693E-02	9.860E-03	-0.292
CS-134	-2.765E-03		3.232E-02	4.163E-02	4.151E-03	-0.066
CS-135	2.935E-02		1.142E-01	1.926E-01	5.494E-02	0.152
CS-136	1.815E-02		1.630E-01	3.042E-01	2.688E-02	0.060
CS-137	1.370E-02		2.866E-02	5.473E-02	5.078E-03	0.250
LA-138	-8.699E-03		2.864E-02	5.225E-02	4.930E-03	-0.166
CE-139	-1.270E-02		2.489E-02	3.988E-02	3.640E-03	-0.318
BA-140	-2.037E-02		3.765E-01	6.939E-01	2.337E-01	-0.029
LA-140	5.728E-02		1.010E-01	2.167E-01	2.039E-02	0.264
CE-141	-3.465E-03		6.543E-02	1.108E-01	2.780E-02	-0.031
CE-144	-3.780E-02		1.661E-01	2.725E-01	2.893E-02	-0.139
PM-144	2.424E-03		2.927E-02	4.837E-02	4.495E-03	0.050
PM-145	-9.569E-02		1.087E-01	1.419E-01	9.246E-02	-0.674
PM-146	-2.154E-02		4.407E-02	7.773E-02	8.335E-03	-0.277
ND-147	2.674E-01		9.810E-01	1.856E+00	1.953E-01	0.144
EU-152	2.045E-01	+	2.420E-01	3.909E-01	4.518E-02	0.523
GD-153	-5.546E-02		7.763E-02	1.240E-01	1.262E-02	-0.447
EU-154	2.456E-04		7.544E-02	1.399E-01	1.250E-02	0.002
EU-155	1.695E-02		7.056E-02	1.096E-01	1.035E-02	0.155
EU-156	1.089E+00	+	1.018E+00	1.669E+00	3.844E-01	0.652
HO-166M	2.012E-04		3.708E-02	6.896E-02	6.399E-03	0.003
HF-172	3.874E-02		1.567E-01	2.639E-01	2.889E-02	0.147
LU-173	8.723E-02		9.202E-02	1.580E-01	4.651E-02	0.552
HF-175	-7.822E-03		3.721E-02	4.777E-02	1.001E-02	-0.164
LU-176	2.412E-02	+	2.348E-02	3.384E-02	9.218E-03	0.713
TA-182	2.978E-01	+	1.801E-01	2.447E-01	2.051E-02	1.217
IR-192	4.136E-03		5.133E-02	8.667E-02	9.288E-03	0.048
HG-203	3.068E-02		3.664E-02	6.306E-02	1.967E-02	0.487
BI-207	7.053E-03		1.960E-02	3.717E-02	3.818E-03	0.190
BI-210M	3.195E-03		4.146E-02	6.895E-02	1.868E-02	0.046
PB-210	5.545E-01		4.888E-01	8.960E-01	7.067E-02	0.619
PB-211	7.321E-01	+	8.571E-01	1.167E+00	1.242E-01	0.627
RN-219	9.477E-02		3.025E-01	5.174E-01	5.502E-02	0.183
RA-225	-5.949E-02		2.431E-01	4.079E-01	3.514E-02	-0.146
TH-227	1.328E-01	+	1.126E-01	3.270E-01	7.024E-02	0.406
AC-228	4.490E-01	+	1.877E-01	2.779E-01	2.420E-02	1.616
TH-230	-1.114E+01		5.887E+00	7.947E+00	6.163E-01	-1.402
PA-231	-3.339E-01		9.696E-01	1.218E+00	3.395E-01	-0.274
TH-231	1.564E-02		2.006E-01	3.435E-01	4.431E-02	0.046
PA-233	2.119E-03		9.979E-02	1.537E-01	5.163E-02	0.014
PA-234	1.734E-02		8.158E-02	1.374E-01	1.472E-02	0.126
PA-234M	1.173E+00		2.667E+00	5.320E+00	4.604E-01	0.220

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-234	1.847E-01		5.373E-01	9.940E-01	7.379E-02	0.186
U-235	-6.995E-03		1.583E-01	2.683E-01	4.915E-02	-0.026
NP-237	4.091E-02		1.710E-01	2.657E-01	2.510E-02	0.154
AM-241	-1.426E-01		5.730E-02	8.249E-02	5.908E-03	-1.728
AM-243	1.057E-01		3.321E-02	5.973E-02	4.979E-03	1.770
CM-243	1.916E-02		1.311E-01	2.195E-01	6.747E-02	0.087

Total number of lines in spectrum 49
Number of unidentified lines 19
Number of lines tentatively identified by NID 30 61.22%

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.011E+01	1.011E+01	0.148E+01	14.66	
TL-208	1.41E+10Y	1.00	2.560E-01	2.560E-01	0.849E-01	33.16	
BI-212	1.41E+10Y	1.00	3.187E-01	3.187E-01	2.870E-01	90.03	
PB-212	1.41E+10Y	1.00	3.011E-01	3.011E-01	0.870E-01	28.89	
BI-214	1602.00Y	1.00	3.028E-01	3.028E-01	0.907E-01	29.97	
PB-214	1602.00Y	1.00	2.924E-01	2.924E-01	0.922E-01	31.53	
RA-223	3.28E+04Y	1.00	3.524E-01	3.524E-01	3.171E-01	89.97	
RA-224	1.41E+10Y	1.00	1.054E+00	1.054E+00	0.680E+00	64.48	
RA-226	1602.00Y	1.00	9.810E-01	9.810E-01	20.33E-01	207.24	
Total Activity :			1.397E+01	1.397E+01			

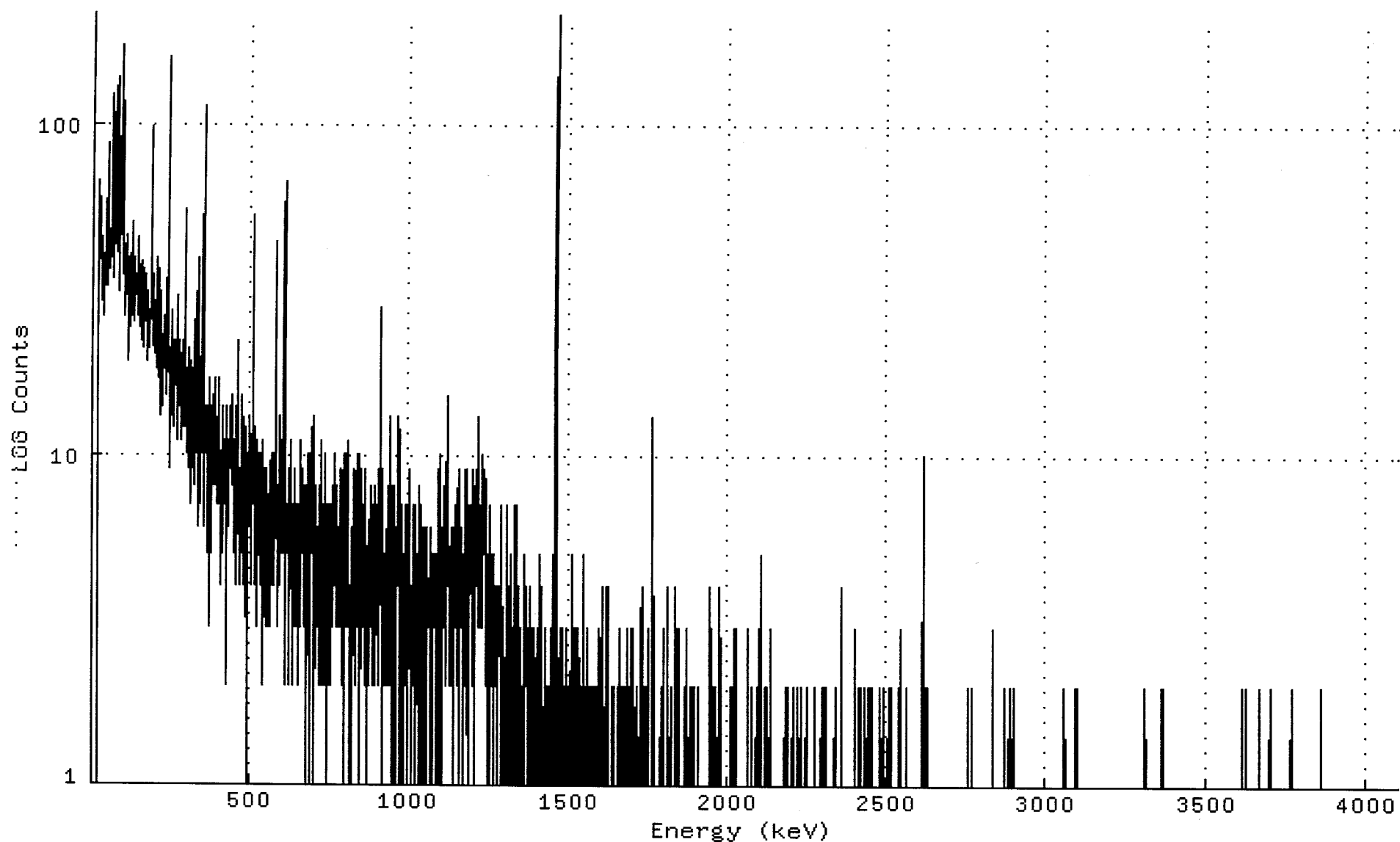
Nuclide Type : ACTIVATION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/GRAM	Wtd Mean Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-58	70.80D	1.35	2.849E-02	3.835E-02	3.490E-02	91.00	
LU-172	6.70D	23.1	1.108E-01	2.560E+00	1.240E+00	48.45	
Total Activity :			1.393E-01	2.598E+00			

Grand Total Activity : 1.411E+01 1.656E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Spectrum : DKA100:[GAMMA.SCUSR.ARCHIVE]SMP_130301318_GE1_GAS1202_190155.CNF;1
Title :
Sample Title: MQZ-BKGD-W-130303
Start Time: 2-APR-2013 08:00: Sample Time: 3-MAR-2013 00:00: Energy Offset: -2.35223E-01
Real Time : 0 01:00:00.65 Sample ID : 1303013-18 Energy Slope : 1.00007E+00
Live Time : 0 01:00:00.00 Sample Type: SOLID Energy Quad : 0.00000E+00



Channel Contents for DKA100: [GAMMA.SCUSR.ARCHIVE] SMP_130301318_GE1_GAS1202_1901

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	30	42	67	54	45	44
25:	44	43	45	32	29	30	35	35
33:	45	34	40	30	30	30	26	42
41:	37	32	42	42	41	86	87	47
49:	40	41	32	47	36	44	48	37
57:	38	49	46	49	39	48	123	95
65:	54	64	44	49	34	53	57	48
73:	54	61	129	75	138	108	49	58
81:	41	49	43	71	63	31	91	75
89:	46	72	55	71	173	79	49	40
97:	35	49	44	39	43	26	35	40
105:	28	41	38	36	46	41	30	32
113:	38	35	26	39	19	30	29	39
121:	36	40	35	31	42	50	44	26
129:	42	33	35	39	37	25	34	33
137:	35	32	35	33	30	33	29	45
145:	26	36	29	27	24	30	34	27
153:	37	33	33	38	28	22	25	35
161:	25	30	36	28	21	35	25	31
169:	29	32	32	19	29	21	31	28
177:	24	22	27	26	24	21	21	30
185:	39	98	58	27	27	35	22	25
193:	24	27	22	20	21	28	29	29
201:	29	20	25	22	28	39	19	17
209:	36	23	29	31	21	15	31	17
217:	28	13	18	14	21	21	21	23
225:	18	20	18	26	24	22	20	17
233:	22	15	25	33	19	60	159	38
241:	34	59	34	9	19	19	21	12
249:	12	25	14	27	16	14	14	12
257:	21	20	19	19	22	16	22	21
265:	17	18	21	14	11	26	30	13
273:	19	17	15	16	18	22	14	20
281:	18	14	11	12	14	17	13	22
289:	12	18	14	12	15	13	55	50
297:	21	12	14	18	18	10	16	10
305:	9	19	21	18	15	7	7	11
313:	19	12	13	15	12	15	13	18
321:	10	8	20	14	12	15	21	31
329:	18	11	18	18	10	11	14	24
337:	6	39	35	11	12	7	15	14
345:	12	10	11	14	11	15	25	113
353:	57	7	6	13	11	11	10	10
361:	10	14	12	14	10	8	11	5
369:	9	10	5	9	17	16	3	14
377:	5	9	10	10	7	12	10	15
385:	9	14	8	9	17	11	8	8
393:	8	10	7	7	10	10	12	14
401:	7	9	17	11	13	8	10	5
409:	4	9	9	5	11	6	14	9
417:	10	7	11	10	8	8	8	14
425:	13	11	5	2	8	6	11	9

433:	10	6	8	11	10	14	12	9
441:	9	15	10	13	8	14	9	8
449:	10	5	5	11	8	7	4	9
457:	4	11	14	8	8	6	22	15
465:	8	4	9	8	9	7	8	6
473:	9	5	8	10	15	11	8	5
481:	11	4	8	12	9	8	11	10
489:	10	1	4	9	10	9	6	10
497:	6	13	9	8	13	10	4	10
505:	9	11	8	7	9	21	53	37
513:	12	5	8	7	12	4	5	10
521:	8	11	5	5	3	8	6	9
529:	8	10	7	9	5	9	4	5
537:	10	9	7	3	11	5	2	5
545:	7	9	9	6	9	4	3	5
553:	9	4	8	7	6	3	7	7
561:	5	8	3	5	4	7	9	10
569:	6	6	8	5	4	4	4	6
577:	5	10	5	7	7	9	44	31
585:	10	3	8	5	4	5	8	7
593:	6	4	5	13	8	8	9	5
601:	5	9	11	7	5	8	6	12
609:	51	67	13	2	4	5	5	7
617:	7	7	5	5	5	6	4	9
625:	2	2	4	5	7	5	11	4
633:	5	3	2	6	5	7	5	9
641:	6	3	4	8	3	5	3	6
649:	6	7	5	6	7	5	2	5
657:	5	3	10	8	9	11	9	8
665:	9	9	9	7	5	6	6	8
673:	7	4	3	8	5	4	6	1
681:	4	5	10	7	5	4	6	1
689:	6	5	4	10	8	8	5	8
697:	5	9	12	8	13	4	6	6
705:	1	5	5	8	3	5	6	5
713:	3	6	5	3	6	2	6	5
721:	5	5	8	4	10	2	10	11
729:	4	3	2	3	5	6	7	2
737:	5	2	5	10	7	4	6	0
745:	3	7	2	7	6	2	2	4
753:	4	7	5	5	5	2	2	5
761:	3	3	8	6	8	7	7	10
769:	9	6	4	4	8	4	4	3
777:	5	5	4	3	3	6	6	5
785:	8	9	8	6	3	5	6	5
793:	4	2	8	10	4	7	3	1
801:	3	8	6	10	8	3	9	6
809:	4	6	3	11	3	4	4	0
817:	3	3	0	4	2	6	0	3
825:	1	6	4	9	5	4	8	2
833:	5	6	4	6	8	10	9	4
841:	4	7	3	10	5	0	6	6
849:	0	5	4	6	9	7	4	3
857:	4	5	5	5	7	2	6	4
865:	9	2	7	4	5	1	4	4
873:	2	2	3	5	4	3	5	8
881:	4	3	5	4	3	4	4	7
889:	2	5	5	5	6	2	5	8
897:	3	4	7	7	7	5	4	2
905:	3	3	5	4	9	7	25	28

913:	11	5	4	3	3	0	4	9
921:	4	4	3	2	3	2	5	4
929:	2	4	4	3	5	7	8	4
937:	2	5	4	3	3	4	4	2
945:	13	5	1	6	7	3	5	1
953:	4	1	8	3	1	3	1	5
961:	6	4	4	7	5	4	4	9
969:	13	11	8	5	1	0	4	1
977:	5	5	1	1	7	0	2	5
985:	3	2	3	2	3	5	7	5
993:	5	1	1	6	1	7	2	3
1001:	9	3	5	4	5	1	3	1
1009:	2	3	4	4	3	4	7	4
1017:	2	7	7	2	1	6	3	3
1025:	4	3	3	5	3	0	8	3
1033:	1	2	2	2	1	5	1	7
1041:	5	4	1	6	5	6	4	3
1049:	2	6	3	1	6	5	3	1
1057:	0	4	6	3	4	4	3	4
1065:	4	4	3	6	3	1	4	2
1073:	3	2	2	0	5	3	3	4
1081:	4	3	5	3	4	5	1	0
1089:	3	0	2	5	4	9	5	10
1097:	9	1	0	1	0	6	5	6
1105:	3	0	5	3	5	7	8	4
1113:	3	5	2	4	3	6	7	13
1121:	15	6	4	4	7	4	2	2
1129:	3	2	3	2	5	6	4	3
1137:	4	5	2	6	4	1	3	3
1145:	5	4	7	7	4	3	7	4
1153:	3	2	7	9	1	3	4	5
1161:	2	5	6	3	3	4	3	3
1169:	5	1	1	2	0	5	5	9
1177:	2	2	5	2	3	9	3	5
1185:	2	1	5	6	3	7	4	5
1193:	5	5	4	4	7	2	2	4
1201:	2	9	3	8	6	4	1	8
1209:	4	6	4	5	9	5	6	8
1217:	3	3	6	13	10	3	7	4
1225:	7	3	3	3	5	10	4	6
1233:	9	9	7	5	6	9	9	8
1241:	7	6	2	4	3	5	5	2
1249:	2	4	1	5	6	1	4	5
1257:	7	3	5	4	4	2	3	5
1265:	3	2	3	1	4	2	3	2
1273:	2	4	4	1	4	3	4	4
1281:	2	3	4	4	3	3	4	2
1289:	1	3	4	7	4	3	2	0
1297:	2	2	3	2	2	1	2	0
1305:	0	4	3	0	7	2	2	0
1313:	1	4	2	0	3	0	1	4
1321:	5	2	2	1	3	3	1	2
1329:	1	6	1	7	3	1	1	6
1337:	7	2	1	1	1	0	4	3
1345:	0	2	0	1	0	3	1	2
1353:	3	0	1	1	2	1	1	2
1361:	5	3	0	2	0	4	2	2
1369:	3	3	3	1	2	2	2	0
1377:	1	4	4	0	2	3	1	1
1385:	1	2	2	3	1	3	2	0

1393:	2	3	2	2	1	1	0	0
1401:	2	0	1	1	1	3	2	5
1409:	4	4	4	0	4	0	0	3
1417:	2	1	1	1	0	0	0	0
1425:	3	0	2	1	3	1	2	1
1433:	2	2	0	1	1	0	1	1
1441:	2	1	1	3	2	3	3	1
1449:	1	3	4	1	5	2	1	1
1457:	3	0	8	89	218	119	19	3
1465:	1	1	1	2	0	1	0	2
1473:	3	1	1	1	0	2	1	2
1481:	0	2	2	3	1	0	1	2
1489:	1	2	0	0	1	0	2	3
1497:	1	2	2	0	0	1	2	2
1505:	1	1	1	0	5	4	4	0
1513:	1	0	1	2	1	1	1	3
1521:	0	0	3	0	1	0	1	0
1529:	1	1	1	3	2	1	0	2
1537:	0	1	2	0	1	0	0	2
1545:	0	2	5	0	1	3	1	1
1553:	2	0	0	0	0	2	0	3
1561:	1	0	2	1	2	1	1	0
1569:	1	0	2	2	0	0	1	0
1577:	0	0	2	0	0	0	0	1
1585:	0	2	2	1	2	0	1	0
1593:	2	3	1	1	0	1	1	0
1601:	1	1	1	2	4	0	0	1
1609:	1	0	1	1	1	1	1	1
1617:	3	0	1	3	4	2	0	1
1625:	0	1	4	1	0	0	0	1
1633:	1	0	1	1	2	1	0	1
1641:	2	0	0	0	0	0	0	0
1649:	0	1	0	0	0	0	1	0
1657:	0	2	1	2	2	3	3	0
1665:	0	0	1	1	2	1	0	0
1673:	2	1	0	1	0	1	0	2
1681:	1	0	0	3	1	2	1	1
1689:	2	2	1	1	2	2	0	1
1697:	1	0	1	3	0	0	1	0
1705:	2	3	0	1	0	1	1	1
1713:	0	2	0	0	1	2	1	1
1721:	0	0	0	1	0	2	1	3
1729:	0	3	4	1	2	0	1	0
1737:	0	0	2	2	1	1	0	0
1745:	0	1	2	0	2	1	1	3
1753:	0	1	0	1	1	0	0	1
1761:	0	1	5	8	13	7	2	1
1769:	0	1	0	1	1	0	0	0
1777:	1	0	0	0	1	0	0	1
1785:	0	1	0	0	0	0	2	0
1793:	1	1	2	0	0	0	3	1
1801:	0	1	0	1	0	0	0	1
1809:	1	0	4	0	1	1	1	1
1817:	0	0	1	0	2	0	2	0
1825:	0	1	1	0	0	1	0	0
1833:	1	0	1	0	0	4	1	0
1841:	0	3	0	1	1	1	0	3
1849:	0	1	0	0	1	0	1	0
1857:	1	0	0	0	1	1	0	0
1865:	2	0	1	0	0	0	0	1

1873:	3	2	1	0	0	0	0	0
1881:	0	2	0	1	2	2	0	2
1889:	2	0	0	0	1	1	1	2
1897:	0	1	1	1	0	1	0	0
1905:	1	2	0	1	0	0	1	0
1913:	1	0	0	0	0	0	1	0
1921:	0	1	0	0	0	0	1	0
1929:	0	1	1	1	0	0	0	1
1937:	0	0	0	0	1	0	4	0
1945:	1	2	3	1	0	0	0	0
1953:	0	1	0	1	1	2	1	1
1961:	0	0	0	2	1	0	1	0
1969:	1	0	0	0	0	0	0	4
1977:	2	0	0	0	0	0	0	1
1985:	0	1	0	0	0	0	0	0
1993:	0	1	1	0	0	0	1	1
2001:	0	1	0	0	0	1	0	0
2009:	2	0	0	0	1	1	0	1
2017:	0	2	0	0	1	2	1	3
2025:	0	1	2	3	2	1	1	0
2033:	1	0	1	1	1	1	0	0
2041:	0	0	0	0	0	0	0	0
2049:	0	0	0	1	0	1	0	0
2057:	0	0	0	0	0	0	3	2
2065:	1	0	0	0	0	1	0	0
2073:	1	0	2	0	0	0	0	0
2081:	0	0	0	0	0	0	0	1
2089:	0	1	2	0	1	1	0	0
2097:	0	1	3	1	0	1	5	4
2105:	0	0	0	0	0	1	0	0
2113:	1	0	1	0	0	1	2	1
2121:	2	1	1	0	0	2	0	0
2129:	1	1	0	0	1	0	0	3
2137:	1	1	0	0	1	1	1	0
2145:	1	0	0	0	1	0	0	0
2153:	0	0	0	1	0	0	1	0
2161:	0	0	0	0	1	0	1	1
2169:	1	1	0	0	0	1	0	0
2177:	1	0	0	1	2	0	0	0
2185:	0	0	0	2	1	0	1	1
2193:	0	0	0	1	0	0	0	0
2201:	0	0	0	0	2	0	0	0
2209:	1	1	0	0	0	0	1	1
2217:	0	0	2	0	2	1	0	1
2225:	0	0	0	0	2	0	2	1
2233:	0	0	0	0	0	0	1	0
2241:	0	1	1	0	0	0	2	0
2249:	1	1	2	0	0	0	0	0
2257:	1	0	1	1	1	1	1	1
2265:	0	0	0	1	0	0	1	0
2273:	0	0	2	0	1	0	1	1
2281:	0	0	0	1	0	0	0	0
2289:	0	0	0	0	0	0	2	0
2297:	1	1	0	1	0	0	0	2
2305:	0	1	0	2	1	0	1	0
2313:	0	0	0	1	1	1	0	0
2321:	0	0	1	1	0	0	0	0
2329:	1	1	1	0	0	0	1	1
2337:	2	0	0	1	0	0	1	0
2345:	1	0	1	1	0	0	0	0

2353:	0	0	0	4	0	1	0	0
2361:	1	0	0	0	0	1	1	0
2369:	1	1	0	0	1	0	0	1
2377:	1	0	1	1	1	0	0	0
2385:	0	0	0	0	0	1	1	0
2393:	0	0	0	0	0	3	1	1
2401:	1	0	0	0	1	0	1	0
2409:	0	2	0	0	1	1	0	2
2417:	1	0	0	0	1	0	1	0
2425:	0	0	0	0	0	2	0	0
2433:	0	0	1	0	0	1	2	0
2441:	0	1	0	0	1	0	1	2
2449:	0	0	2	0	0	0	1	1
2457:	0	0	0	0	0	0	0	0
2465:	0	0	0	0	0	0	0	0
2473:	1	0	0	2	0	1	0	0
2481:	0	0	0	0	0	1	2	0
2489:	0	0	0	0	0	0	0	0
2497:	1	0	1	0	0	0	0	0
2505:	2	0	1	0	1	0	1	2
2513:	0	1	2	1	0	0	0	0
2521:	0	0	0	1	0	0	1	0
2529:	0	0	0	0	0	0	0	0
2537:	0	0	1	2	2	0	0	0
2545:	3	0	0	0	0	1	0	1
2553:	0	0	0	0	0	0	0	1
2561:	0	2	0	0	0	0	0	1
2569:	1	1	0	0	0	0	0	0
2577:	0	0	0	0	0	0	1	0
2585:	0	0	0	1	0	0	0	0
2593:	0	0	0	0	0	0	0	0
2601:	0	1	0	0	0	1	0	0
2609:	0	1	1	2	5	10	10	6
2617:	2	0	1	0	2	0	0	0
2625:	0	0	2	0	0	1	0	1
2633:	0	0	0	0	0	0	0	0
2641:	0	0	1	0	0	0	0	0
2649:	0	0	0	0	0	1	0	0
2657:	0	1	0	0	0	1	0	1
2665:	0	1	1	0	0	0	0	0
2673:	0	1	1	0	0	1	0	0
2681:	1	0	0	0	1	0	0	1
2689:	1	0	0	0	0	0	0	0
2697:	0	1	0	0	0	0	0	0
2705:	0	0	0	0	0	0	0	0
2713:	0	0	0	0	1	1	0	1
2721:	0	0	0	0	0	0	1	1
2729:	0	0	0	1	0	0	0	0
2737:	0	0	0	0	1	0	0	0
2745:	0	1	0	0	1	0	1	2
2753:	0	0	0	0	0	0	0	1
2761:	0	0	1	2	0	0	1	0
2769:	1	0	1	0	0	0	0	0
2777:	0	0	0	1	0	1	0	0
2785:	0	0	0	0	1	0	0	0
2793:	0	0	0	0	0	0	0	1
2801:	0	0	1	1	0	0	0	0
2809:	1	0	0	0	0	0	0	0
2817:	0	1	0	0	0	0	0	0
2825:	0	0	1	0	0	0	3	0

2833:	0	1	0	0	1	0	1	0
2841:	0	0	0	0	1	0	1	0
2849:	0	0	0	0	0	1	1	0
2857:	1	0	0	1	1	0	0	1
2865:	0	1	2	0	0	0	0	1
2873:	0	0	0	0	0	0	0	0
2881:	1	2	0	0	0	1	1	0
2889:	0	0	0	0	0	2	0	0
2897:	1	1	0	0	0	0	0	0
2905:	0	1	0	0	0	0	0	0
2913:	1	0	1	1	0	0	0	0
2921:	1	0	0	1	0	0	0	0
2929:	0	0	0	0	0	1	0	0
2937:	1	0	0	0	0	1	0	0
2945:	0	0	0	0	1	0	0	1
2953:	0	1	0	0	0	0	1	0
2961:	1	0	0	1	0	1	0	0
2969:	0	0	0	0	0	0	0	0
2977:	0	0	0	0	0	0	0	1
2985:	0	0	0	0	0	0	0	0
2993:	0	0	1	0	0	0	0	0
3001:	1	0	0	0	0	0	0	0
3009:	0	1	0	0	1	0	0	0
3017:	0	0	1	1	0	0	0	0
3025:	0	1	0	0	0	0	0	0
3033:	0	0	0	0	1	0	0	0
3041:	1	0	0	0	0	1	0	0
3049:	0	1	0	0	0	0	2	0
3057:	0	0	0	0	1	0	1	0
3065:	0	0	0	0	1	0	1	0
3073:	0	0	0	0	0	0	1	0
3081:	0	0	0	0	0	0	0	1
3089:	2	0	0	0	0	2	0	0
3097:	0	0	0	0	0	1	0	0
3105:	1	0	0	0	0	0	0	0
3113:	1	0	0	0	0	0	0	0
3121:	0	0	0	0	0	0	0	1
3129:	0	0	0	0	0	0	0	0
3137:	0	0	0	0	0	1	0	1
3145:	0	0	0	0	1	0	0	1
3153:	0	0	0	0	0	0	0	0
3161:	0	1	0	0	0	0	1	0
3169:	1	0	0	0	0	1	0	0
3177:	0	0	0	0	0	0	0	1
3185:	1	0	0	0	0	0	0	0
3193:	1	0	0	0	1	1	1	0
3201:	0	0	0	0	1	0	0	1
3209:	0	1	0	0	0	0	1	0
3217:	0	0	0	0	0	0	0	0
3225:	0	0	0	0	0	0	0	1
3233:	0	0	0	0	0	0	0	0
3241:	0	0	0	0	0	1	0	0
3249:	0	0	0	0	0	0	1	0
3257:	0	1	0	0	0	0	1	1
3265:	0	0	0	0	0	0	0	0
3273:	0	0	0	0	0	0	0	0
3281:	0	0	0	0	0	0	0	0
3289:	0	1	0	0	1	1	0	0
3297:	1	0	0	0	1	1	0	0
3305:	0	0	2	1	0	0	0	0

3313:	0	0	0	0	0	0	0	0
3321:	0	0	0	0	0	1	0	1
3329:	0	0	0	0	0	1	0	0
3337:	0	0	0	0	1	0	1	0
3345:	0	0	0	1	1	0	0	0
3353:	0	0	0	0	0	0	2	1
3361:	0	1	0	0	2	0	0	0
3369:	0	0	0	0	0	0	0	0
3377:	0	0	0	1	0	0	0	0
3385:	1	0	0	0	0	0	0	0
3393:	1	0	0	0	1	0	1	1
3401:	0	0	0	0	1	0	0	0
3409:	0	1	0	1	0	0	0	0
3417:	0	0	0	0	0	0	0	0
3425:	1	0	0	0	0	0	0	0
3433:	0	0	0	0	0	0	0	0
3441:	0	0	0	1	0	0	0	0
3449:	0	0	0	0	0	0	0	1
3457:	0	0	0	1	1	0	0	0
3465:	0	0	0	0	0	0	0	0
3473:	0	1	0	0	0	0	0	0
3481:	0	0	0	0	0	0	0	1
3489:	1	0	0	0	0	0	0	1
3497:	0	1	1	0	0	1	0	0
3505:	1	0	0	0	1	0	0	0
3513:	0	0	1	0	0	1	0	0
3521:	0	0	0	0	0	0	0	0
3529:	1	1	0	0	0	0	0	0
3537:	0	0	0	0	0	0	0	0
3545:	0	0	0	0	0	0	0	0
3553:	1	0	0	1	0	0	1	0
3561:	0	0	0	0	0	0	0	0
3569:	0	0	0	0	0	1	0	0
3577:	1	0	0	0	0	0	0	0
3585:	0	0	0	0	0	0	1	0
3593:	1	0	0	0	0	1	0	0
3601:	0	0	0	0	0	0	0	0
3609:	0	2	0	0	0	0	0	0
3617:	0	0	0	0	0	1	0	2
3625:	0	0	0	0	0	0	0	0
3633:	0	1	0	0	0	0	0	1
3641:	0	0	0	0	1	0	0	0
3649:	0	0	0	0	0	0	0	1
3657:	0	1	0	0	0	0	2	0
3665:	0	0	0	0	0	0	0	0
3673:	0	0	0	0	0	1	0	0
3681:	0	0	0	0	0	0	0	0
3689:	0	0	0	0	1	0	0	0
3697:	1	2	0	0	0	0	1	0
3705:	0	0	0	0	0	0	1	0
3713:	1	0	0	1	0	0	0	0
3721:	0	0	0	0	0	0	1	0
3729:	1	0	0	0	0	0	1	0
3737:	0	0	0	0	0	1	0	0
3745:	0	0	1	0	0	0	0	0
3753:	0	0	0	0	0	0	1	0
3761:	0	0	0	2	0	0	1	0
3769:	0	0	0	0	0	0	0	0
3777:	0	0	0	0	0	0	0	0
3785:	1	0	0	1	0	0	0	0

3793:	0	1	0	0	0	0	0	0
3801:	0	0	0	0	0	0	0	0
3809:	0	1	0	1	0	0	0	0
3817:	0	0	0	1	0	0	0	0
3825:	0	0	0	1	0	0	0	1
3833:	0	0	0	0	0	0	0	0
3841:	0	0	0	0	0	0	0	0
3849:	0	0	0	0	0	0	0	1
3857:	2	1	0	0	0	0	0	0
3865:	0	0	0	0	1	0	1	0
3873:	0	0	0	0	0	0	0	0
3881:	0	0	1	0	0	0	0	1
3889:	0	1	0	0	0	0	0	1
3897:	1	1	0	0	0	0	0	0
3905:	0	0	0	0	1	0	0	0
3913:	1	0	0	0	0	0	0	0
3921:	0	0	0	0	0	0	0	0
3929:	0	0	0	0	0	0	0	0
3937:	0	0	0	0	1	0	1	0
3945:	0	0	0	0	0	0	0	0
3953:	0	0	1	0	1	1	0	0
3961:	1	0	0	0	0	0	0	0
3969:	0	0	1	0	0	0	0	1
3977:	0	0	0	0	0	0	0	1
3985:	0	0	0	0	0	0	0	0
3993:	0	0	0	0	0	0	0	1
4001:	0	0	0	0	0	0	0	1
4009:	0	0	0	0	0	0	0	0
4017:	0	1	0	0	0	0	0	0
4025:	0	0	0	0	0	0	0	0
4033:	0	0	0	1	0	0	0	0
4041:	0	0	0	0	0	0	0	0
4049:	0	0	0	0	0	0	0	1
4057:	0	0	0	0	0	0	0	0
4065:	0	0	0	0	0	0	0	1
4073:	1	0	0	0	0	0	0	0
4081:	0	0	1	0	0	0	0	0
4089:	0	0	0	0	1	0	0	0

QA filename : DKA100:[GAMMA.SCUSR.QA]QCB_GE3.QAF;1

Sample ID : Bkgrnd Check Sample quantity : 1.00 EACH
Sample date : 1-APR-2013 06:32:59 Acquisition date : 1-APR-2013 06:32:59
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:03.24

Out-of-range Test: N-SIGMA

Parameter Description	Value	Deviation	Flag
[Mean+/-Stdev]			
Background Counts	1.79E+03	-0.03	
[2.96E+03+/-4.23E+04]			
*Background Rate	2.0	-0.03	
[3.3+/-47]			

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4 / 1 / 13

QA filename : DKA100:[GAMMA.SCUSR.QA]QCB_GE2.QAF;1

Sample ID : Bkgrnd Check Sample quantity : 1.00 EACH
Sample date : 1-APR-2013 06:13:45 Acquisition date : 1-APR-2013 06:13:45
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.16

Out-of-range Test: N-SIGMA

Parameter Description	Value	Deviation	Flag
[Mean+/-Stdev]			
*Background Counts	2303	-0.19	
[3039+/-3853]			
*Background Rate	2.6	-0.05	
[33+/-558]			

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4/1/17

QA filename : DKA100:[GAMMA.SCUSR.QA]QCB_GE1.QAF;1

Sample ID : Bkgrnd Check Sample quantity : 1.00 EACH
Sample date : 1-APR-2013 05:52:22 Acquisition date : 1-APR-2013 05:52:22
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.09

Out-of-range Test: N-SIGMA

Parameter Description	Value	Deviation	Flag
[Mean+/-Stdev]			
Background Counts	1856	0.08	
[1838+/-225]			
Background Rate	2.06	0.07	
[2.05+/-0.24]			

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4/1/12

QA filename : DKA100:[GAMMA.SCUSR.QA]QCB_GE2.QAF;1

Sample ID : Bkgrnd Check Sample quantity : 1.00 EACH
Sample date : 2-APR-2013 05:57:39 Acquisition date : 2-APR-2013 05:57:39
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.16

Out-of-range Test: N-SIGMA

Parameter Description	Value	Deviation	Flag
[Mean+/-Stdev]			
*Background Counts	2253	-0.20	
[3039+/-3853]			
*Background Rate	2.5	-0.05	
[33+/-558]			

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____  Approval Date: 4/2/12

QA filename : DKA100:[GAMMA.SCUSR.QA]QCB_GE1.QAF;1

Sample ID : Bkgrnd Check Sample quantity : 1.00 EACH
Sample date : 2-APR-2013 06:40:48 Acquisition date : 2-APR-2013 06:40:48
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:00.09

Out-of-range Test: N-SIGMA

Parameter Description	Value	Deviation	Flag
[Mean+/-Stdev]			
Background Counts	2115	1.23	
[1838+/-225]			
Background Rate	2.35	1.27	
[2.05+/-0.24]			

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: C Approval Date: 4/2/13

QA filename : DKA100: [GAMMA.SCUSR.QA] QCC_GE2_GAS1202.QAF;1

Sample ID : Calib Check Sample quantity : 736. GRAM
Sample date : 1-JAN-2012 00:00:00 Acquisition date : 2-APR-2013 05:10:32
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:14.12

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
*Peak Centroid 59.54 kev	58	61	59	
*Peak Centroid 661.65 kev	660	663	661	
*Peak Centroid 1173.22 kev	1172	1175	1173	
*Peak Centroid 1332.49 kev	1331	1334	1332	
*Peak Centroid 1836.01 kev	1835	1838	1835	
*Peak FWHM Am-241 59.54 kev	0.5	3.0	1.6	
*Peak FWHM Cs-137 661.65 kev	0.5	3.0	1.7	
*Peak FWHM Co-60 1173.22 kev	0.5	3.0	2.1	
*Peak FWHM Co-60 1332.49 kev	0.5	3.0	2.2	
*Peak FWHM Y-88 1836.01 kev	0.5	3.0	2.6	
*DC Activity Am-241 59.54 kev	162	242	184	
*DC Activity Cs-137 661.65 kev	66	100	84	
*DC Activity Co-60 1173.22 kev	104	156	133	
*DC Activity Co-60 1332.49 kev	104	156	132	
*DC Activity Y-88 1836.01 kev	226	338	281	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4/24/17

QA ~~filename~~ : DKA100: [GAMMA.SCUSR.QA] QCC_GE1_GAS1202.QAF;1

Sample ID : Calib Check Sample quantity : 736. GRAM
Sample date : 1-JAN-2012 00:00:00 Acquisition date : 2-APR-2013 06:18:52
Elapsed live time: 0 00:15:00.00 Elapsed real time: 0 00:15:17.99

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
*Peak Centroid 59.54 kev	58	61	60	
*Peak Centroid 661.65 kev	660	663	662	
*Peak Centroid 1173.22 kev	1172	1175	1174	
*Peak Centroid 1332.49 kev	1331	1334	1333	
*Peak Centroid 1836.01 kev	1834.5	1838.0	1836.3	
*Peak FWHM Am-241 59.54 kev	0.5	3.0	1.6	
*Peak FWHM Cs-137 661.65 kev	0.5	3.0	1.6	
*Peak FWHM Co-60 1173.22 kev	0.5	3.0	1.9	
*Peak FWHM Co-60 1332.49 kev	0.5	3.0	2.0	
*Peak FWHM Y-88 1836.01 kev	0.5	3.0	2.3	
*DC Activity Am-241 59.54 kev	162	242	200	
*DC Activity Cs-137 661.65 kev	66	100	85	
*DC Activity Co-60 1173.22 kev	104	156	131	
*DC Activity Co-60 1332.49 kev	104	156	133	
*DC Activity Y-88 1836.01 kev	226	338	281	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4/2/13



Metals Case Narrative

Weston Solutions, Inc.

Marquez Mine DRS

Work Order Number: 1303059

1. This report consists of 15 soil samples.
2. The samples were received cool and intact by ALS on 03/05/13.
3. The samples were prepared and analyzed based on SW-846, 3rd Edition procedures.

The samples were aliquoted as received and corrected for percent moisture.

For analysis by Trace ICP and ICP-MS, the samples were digested following method 3050B and the current revision of SOP 806.

For analysis by Cold Vapor AA (CVAA), the samples were digested following method 7471A and the current revision of SOP 812.

4. Analysis by Trace ICP followed method 6010B and the current revision of SOP 834.

Analysis by ICP-MS followed method 6020A and the current revision of SOP 827.

Analysis by CVAA followed method 7471A and the current revision of SOP 812.

5. All standards and solutions are NIST traceable and were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

7. General quality control procedures.
 - n A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.



- n The preparation (method) blank associated with each digestion batch was below the reporting limit for the requested analytes.
 - n All laboratory control sample criteria were met.
 - n All initial and continuing calibration blanks were below the reporting limit for the requested analytes with the exception of CCB12 for selenium. The analyte that exceeded acceptance criteria was not reported from the samples bracketed by this CCB.
 - n All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.
 - n The interference check samples and high standard readbacks associated with Method 6010B were within acceptance criteria.
 - n The interference check samples associated with Method 6020A were analyzed.
8. Matrix specific quality control procedures.

Sample 1303059-1 was designated as the quality control sample for each ICP analysis. Per method requirements, matrix QC was performed for the mercury analysis. Since a sample from this order number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- n A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met with the following exceptions:

<u>Analyte</u>	<u>Sample ID</u>
Antimony	1303059-1MS & MSD
Calcium	1303059-1MS & MSD
Manganese	1303059-1MSD
Vanadium	1303059-1MS & MSD

The native sample results are flagged for matrix spike failure and an analytical post spike was performed. The result of the spike was acceptable indicating that the matrix was not significantly affecting quantitation of these analytes.

- n Matrix spike recoveries could not be evaluated for the following analytes:

<u>Analyte</u>	<u>Sample ID</u>
Aluminum	1303059-1
Iron	1303059-1
Uranium	1303059-1



The concentrations of these analytes in the native sample were greater than four times the concentration of matrix spike added during the digestion. When sample concentration is that much greater than the spike added, spike recoveries may not be accurate. The laboratory control samples indicate that the digestion and analysis were in control.

- A sample duplicate and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met with the following exceptions:

<u>Analyte</u>	<u>Sample ID</u>
Calcium	1303059-1D & MSD

The native sample result is flagged for duplicate failure. Where spike duplicate precision was outside control limits only the duplicate page shows the flag.

- A serial dilution was analyzed with each ICP batch. All acceptance criteria were met with the following exception:

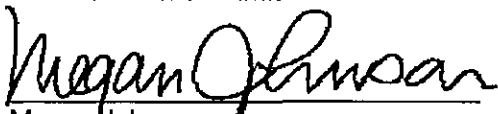
<u>Analyte</u>	<u>Sample ID</u>
Potassium	1303059-1L

The native sample result is flagged for serial dilution failure.

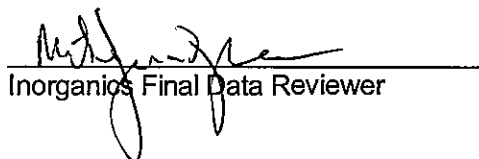
9. Samples 1303059-5, -7, -9, and -11 through -14 were diluted for thallium, due to an unknown interference.

It is a standard practice that samples for ICP-MS are analyzed at a dilution.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.


Megan Johnson
Inorganics Primary Data Reviewer

3/12/13
Date


Inorganics Final Data Reviewer

3/12/13
Date



Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- If the analyte was analyzed for but not detected a "U" is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
 - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 - M - Duplicate injection precision was not met.
 - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 - * - Duplicate analysis (relative percent difference) not within control limits.
 - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.



Chain of Custody

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1303059

Client Name: Weston Solutions, Inc.

Client Project Name: Marquez Mine DRS

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
MQZ-35-130303	1303059-1		SOIL	03-Mar-13	8:25
MQZ-49-130303	1303059-2		SOIL	03-Mar-13	9:11
MQZ-51-130303	1303059-3		SOIL	03-Mar-13	9:06
MQZ-51-2-130303	1303059-4		SOIL	03-Mar-13	9:06
MQZ-52-130303	1303059-5		SOIL	03-Mar-13	9:00
MQZ-61-130303	1303059-6		SOIL	03-Mar-13	9:30
MQZ-62-130303	1303059-7		SOIL	03-Mar-13	9:33
MQZ-63-130303	1303059-8		SOIL	03-Mar-13	9:37
MQZ-64-130303	1303059-9		SOIL	03-Mar-13	8:45
MQZ-65-130303	1303059-10		SOIL	03-Mar-13	8:44
MQZ-66-130303	1303059-11		SOIL	03-Mar-13	9:48
MQZ-BKGD-E-130303	1303059-12		SOIL	03-Mar-13	12:55
MQZ-BKGD-N-130303	1303059-13		SOIL	03-Mar-13	13:07
MQZ-BKGD-S-130303	1303059-14		SOIL	03-Mar-13	12:30
MQZ-BKGD-W-130303	1303059-15		SOIL	03-Mar-13	12:20

1303059

USEPA

CHAIN OF CUSTODY RECORD

No: 1-0035121102-130304-0002

DateShipped: 3/4/2013

Marquez Mine DRS

Cooler #: 1

CarrierName: FedEx

Contact Name: Kristie Warr

Lab: ALS Laboratory Group

AirbillNo: 794879667553

Contact Phone: 713-985-6600

Lab Phone: 970-490-1511

Lab #	Sample #	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Sample_Remarks	MS/MSD
①	MQZ-35-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	232,815 CPM	N
②	MQZ-49-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	212,575 CPM	N
③	MQZ-51-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	585,601 CPM	N
④	MQZ-51-2-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	585,601 CPM	N
⑤	MQZ-52-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	191,195 CPM	N
⑥	MQZ-61-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	135,829 CPM	N
⑦	MQZ-62-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	166,617 CPM	N
⑧	MQZ-63-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	510,086 CPM	N
⑨	MQZ-64-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	143,315 CPM	N
⑩	MQZ-65-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	135,378 CPM	N
⑪	MQZ-66-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	155,002 CPM	N
⑫	MQZ-BKGD-E-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	7,827 CPM	N
⑬	MQZ-BKGD-N-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	13,739 CPM	N
⑭	MQZ-BKGD-S-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	8,511 CPM	N
⑮	MQZ-BKGD-W-130303	Metals, Mercury, Molybdenum, Tin, Total Uranium	Soil	3/3/2013	1	Jar	Ice	9,074 CPM	N

Special Instructions: Standard TAT, SW846 6010/6020

SW846 7470/7471

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
15/samples	TSB	3/4/13	Fedex				FED EX		C. Trumble	3-5-13	0810



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Weston

Workorder No: 1303059

Project Manager: AW

Initials: CDT

Date: 3-5-13

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: <u> </u> < green pea <u> </u> > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: <u> </u> dusting <u> </u> moderate <u> </u> heavy	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4 RAD ONLY		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u> </u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u> </u>			
Background µR/hr reading: <u>12</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

Times taken from bottles

If applicable, was the client contacted? YES / NO / ☒ NA Contact: Date/Time:

Project Manager Signature / Date: 3/5/13

13 03 059

Page 1 of 1

#2

From: (903) 348-3917
Patrick Buster
START6 - Weston Solutions, Inc.
825 E. Santa Fe Ave.

Origin ID: GUPA

FedEx
Express

J13101212190326

Grants, NM 87020

SHIP TO: (970) 490-1511

BILL SENDER

Lance Steere
ALS Laboratory Group
225 Commerce Drive

Fort Collins, CO 80524

Ship Date: 04MAR13
ActWgt: 40.0 LB
CAD: 2557564/INET3370

Delivery Address Bar Code



Ref # 20406.012.035.0764.01
Invoice #
PO #
Dept # San Mateo START 6

38.0

122

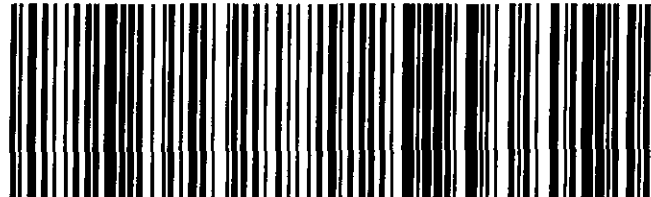
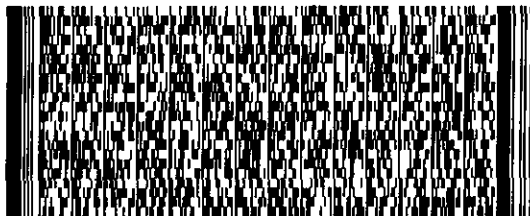
TUE - 05 MAR 8:30A
FIRST OVERNIGHT

TRK# 7948 7966 6925

0201

X1 FTCA12 @

80524
CO-US
DEN



518G2/DCFD/60AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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Sample Results

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-35-130303
Lab ID:	1303059-1

Sample Matrix: SOIL

% Moisture: 2.3

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.029 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2800	20		
7440-36-0	ANTIMONY	1	2	2	U	N
7440-38-2	ARSENIC	1	92	0.99		
7440-39-3	BARIUM	1	43	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	11000	99		*N
7440-47-3	CHROMIUM	1	1.2	0.99		
7440-48-4	COBALT	1	1.7	0.99		
7440-50-8	COPPER	1	2.7	0.99		
7439-89-6	IRON	1	9100	9.9		
7439-92-1	LEAD	1	9.5	0.3		
7439-95-4	MAGNESIUM	1	900	99		
7439-96-5	MANGANESE	1	87	0.99		N
7439-98-7	MOLYBDENUM	1	130	0.99		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	1000	99		E
7782-49-2	SELENIUM	1	42	0.5		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	1	0.99		
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	120	0.99		N
7440-66-6	ZINC	1	11	2		

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

Page 1 of 30

LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-49-130303
Lab ID:	1303059-2

Sample Matrix: SOIL

% Moisture: 1.7

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.001 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	2.3	1		
7440-39-3	BARIUM	1	34	10		
7440-41-7	BERYLLIUM	1	0.51	0.51	U	
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	2000	100		
7440-47-3	CHROMIUM	1	1.3	1		
7440-48-4	COBALT	1	1.1	1		
7440-50-8	COPPER	1	1.3	1		
7439-89-6	IRON	1	3300	10		
7439-92-1	LEAD	1	2.8	0.3		
7439-95-4	MAGNESIUM	1	620	100		
7439-96-5	MANGANESE	1	65	1		
7439-98-7	MOLYBDENUM	1	2.1	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	430	100		
7782-49-2	SELENIUM	1	2.6	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	12	1		
7440-66-6	ZINC	1	7.9	2		

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-51-130303
Lab ID:	1303059-3

Sample Matrix: SOIL

% Moisture: 2.9

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.005 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2800	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	120	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	2.9	0.51		
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	5100	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	2.1	1		
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	7000	10		
7439-92-1	LEAD	1	82	0.31		
7439-95-4	MAGNESIUM	1	670	100		
7439-96-5	MANGANESE	1	77	1		
7439-98-7	MOLYBDENUM	1	850	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	800	100		
7782-49-2	SELENIUM	1	62	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	440	1		
7440-66-6	ZINC	1	9.3	2		

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

Page 5 of 30

LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-51-2-130303
Lab ID:	1303059-4

Sample Matrix: SOIL

% Moisture: 2.0

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.012 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	100	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	2.3	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	5600	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1.8	1		
7440-50-8	COPPER	1	1.1	1		
7439-89-6	IRON	1	7400	10		
7439-92-1	LEAD	1	61	0.3		
7439-95-4	MAGNESIUM	1	700	100		
7439-96-5	MANGANESE	1	85	1		
7439-98-7	MOLYBDENUM	1	750	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	760	100		
7782-49-2	SELENIUM	1	55	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	350	1		
7440-66-6	ZINC	1	9.9	2		

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-52-130303
Lab ID:	1303059-5

Sample Matrix: SOIL

% Moisture: 1.4

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.011 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	6.4	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	6300	100		
7440-47-3	CHROMIUM	1	1.2	1		
7440-48-4	COBALT	1	1.2	1		
7440-50-8	COPPER	1	1.9	1		
7439-89-6	IRON	1	3300	10		
7439-92-1	LEAD	1	5.9	0.3		
7439-95-4	MAGNESIUM	1	620	100		
7439-96-5	MANGANESE	1	81	1		
7439-98-7	MOLYBDENUM	1	5	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	400	100		
7782-49-2	SELENIUM	1	22	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	72	1		
7440-66-6	ZINC	1	8.6	2		

Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-61-130303
Lab ID:	1303059-6

Sample Matrix: SOIL

% Moisture: 1.8

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.015 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2500	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	21	1		
7440-39-3	BARIUM	1	23	10		
7440-41-7	BERYLLIUM	1	0.63	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	6000	100		
7440-47-3	CHROMIUM	1	1.2	1		
7440-48-4	COBALT	1	3	1		
7440-50-8	COPPER	1	4.5	1		
7439-89-6	IRON	1	5700	10		
7439-92-1	LEAD	1	9.2	0.3		
7439-95-4	MAGNESIUM	1	980	100		
7439-96-5	MANGANESE	1	140	1		
7439-98-7	MOLYBDENUM	1	220	1		
7440-02-0	NICKEL	1	2.5	2		
7440-09-7	POTASSIUM	1	490	100		
7782-49-2	SELENIUM	1	46	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	100	1		
7440-66-6	ZINC	1	13	2		

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-62-130303
Lab ID:	1303059-7

Sample Matrix: SOIL

% Moisture: 1.0

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.007 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2400	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	10	1		
7440-39-3	BARIUM	1	38	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4900	100		
7440-47-3	CHROMIUM	1	1.4	1		
7440-48-4	COBALT	1	1.7	1		
7440-50-8	COPPER	1	2.5	1		
7439-89-6	IRON	1	4800	10		
7439-92-1	LEAD	1	10	0.3		
7439-95-4	MAGNESIUM	1	1100	100		
7439-96-5	MANGANESE	1	120	1		
7439-98-7	MOLYBDENUM	1	19	1		
7440-02-0	NICKEL	1	2.1	2		
7440-09-7	POTASSIUM	1	820	100		
7782-49-2	SELENIUM	1	32	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	73	1		
7440-66-6	ZINC	1	12	2		

Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-63-130303
Lab ID:	1303059-8

Sample Matrix: SOIL

% Moisture: 1.6

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.005 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2100	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	19	1		
7440-39-3	BARIUM	1	32	10		
7440-41-7	BERYLLIUM	1	2	0.51		
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	2800	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1.9	1		
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	4500	10		
7439-92-1	LEAD	1	18	0.3		
7439-95-4	MAGNESIUM	1	690	100		
7439-96-5	MANGANESE	1	84	1		
7439-98-7	MOLYBDENUM	1	47	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	570	100		
7782-49-2	SELENIUM	1	36	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	160	1		
7440-66-6	ZINC	1	12	2		

Data Package ID: it1303059-1

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-64-130303
Lab ID:	1303059-9

Sample Matrix: SOIL

% Moisture: 1.4

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.017 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1600	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	5.7	1		
7440-39-3	BARIUM	1	32	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4100	100		
7440-47-3	CHROMIUM	1	1.1	1		
7440-48-4	COBALT	1	1.1	1		
7440-50-8	COPPER	1	1.5	1		
7439-89-6	IRON	1	3400	10		
7439-92-1	LEAD	1	4.6	0.3		
7439-95-4	MAGNESIUM	1	660	100		
7439-96-5	MANGANESE	1	76	1		
7439-98-7	MOLYBDENUM	1	7.4	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	510	100		
7782-49-2	SELENIUM	1	10	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	51	1		
7440-66-6	ZINC	1	8.8	2		

Data Package ID: *it1303059-1*

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-65-130303
Lab ID:	1303059-10

Sample Matrix: SOIL

% Moisture: 1.1

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.026 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1800	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	6.2	0.99		
7440-39-3	BARIUM	1	34	9.9		
7440-41-7	BERYLLIUM	1	0.49	0.49	U	
7440-43-9	CADMIUM	1	0.49	0.49	U	
7440-70-2	CALCIUM	1	5700	99		
7440-47-3	CHROMIUM	1	1.4	0.99		
7440-48-4	COBALT	1	1.7	0.99		
7440-50-8	COPPER	1	2.7	0.99		
7439-89-6	IRON	1	3900	9.9		
7439-92-1	LEAD	1	4.9	0.3		
7439-95-4	MAGNESIUM	1	1000	99		
7439-96-5	MANGANESE	1	91	0.99		
7439-98-7	MOLYBDENUM	1	6.4	0.99		
7440-02-0	NICKEL	1	3.2	2		
7440-09-7	POTASSIUM	1	560	99		
7782-49-2	SELENIUM	1	13	0.49		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	0.99	0.99	U	
7440-31-5	TIN	1	4.9	4.9	U	
7440-62-2	VANADIUM	1	44	0.99		
7440-66-6	ZINC	1	9.1	2		

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-66-130303
Lab ID:	1303059-11

Sample Matrix: SOIL

% Moisture: 0.6

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.015 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1500	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	8.2	0.99		
7440-39-3	BARIUM	1	27	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4600	99		
7440-47-3	CHROMIUM	1	0.99	0.99	U	
7440-48-4	COBALT	1	1.2	0.99		
7440-50-8	COPPER	1	1.8	0.99		
7439-89-6	IRON	1	3600	9.9		
7439-92-1	LEAD	1	6.7	0.3		
7439-95-4	MAGNESIUM	1	670	99		
7439-96-5	MANGANESE	1	79	0.99		
7439-98-7	MOLYBDENUM	1	9.1	0.99		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	390	99		
7782-49-2	SELENIUM	1	24	0.5		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	70	0.99		
7440-66-6	ZINC	1	9.1	2		

Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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LIMS Version: 6.632

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-BKGD-E-130303 Lab ID: 1303059-12	Sample Matrix: SOIL % Moisture: 1.3 Date Collected: 03-Mar-13 Date Extracted: 07-Mar-13 Date Analyzed: 11-Mar-13 Prep Method: SW3050 Rev B	Prep Batch: IP130307-3 QCBatchID: IP130307-3-1 Run ID: IT130311-2A1 Cleanup: NONE Basis: Dry Weight File Name: 130311A.	Analyst: Mike Lundgreen Sample Aliquot: 1.017 G Final Volume: 100 ML Result Units: MG/KG Clean DF: 1
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CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	1.8	1		
7440-39-3	BARIUM	1	45	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	1100	100		
7440-47-3	CHROMIUM	1	2.3	1		
7440-48-4	COBALT	1	1.7	1		
7440-50-8	COPPER	1	3.1	1		
7439-89-6	IRON	1	4500	10		
7439-92-1	LEAD	1	4.5	0.3		
7439-95-4	MAGNESIUM	1	770	100		
7439-96-5	MANGANESE	1	110	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	2.8	2		
7440-09-7	POTASSIUM	1	640	100		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	6.4	1		
7440-66-6	ZINC	1	12	2		

Data Package ID: *it1303059-1*

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-BKGD-N-130303 Lab ID: 1303059-13	Sample Matrix: SOIL % Moisture: 1.6 Date Collected: 03-Mar-13 Date Extracted: 07-Mar-13 Date Analyzed: 11-Mar-13 Prep Method: SW3050 Rev B	Prep Batch: IP130307-3 QCBatchID: IP130307-3-1 Run ID: IT130311-2A1 Cleanup: NONE Basis: Dry Weight File Name: 130311A.	Analyst: Mike Lundgreen Sample Aliquot: 1.017 G Final Volume: 100 ML Result Units: MG/KG Clean DF: 1
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CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	6000	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	5.3	1		
7440-39-3	BARIUM	1	84	10		
7440-41-7	BERYLLIUM	1	0.6	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	18000	100		
7440-47-3	CHROMIUM	1	5.8	1		
7440-48-4	COBALT	1	4.5	1		
7440-50-8	COPPER	1	7.7	1		
7439-89-6	IRON	1	15000	10		
7439-92-1	LEAD	1	10	0.3		
7439-95-4	MAGNESIUM	1	6100	100		
7439-96-5	MANGANESE	1	190	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	8.1	2		
7440-09-7	POTASSIUM	1	1900	100		
7782-49-2	SELENIUM	1	0.97	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	14	1		
7440-66-6	ZINC	1	37	2		

Data Package ID: *it1303059-1*

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-BKGD-S-130303 Lab ID: 1303059-14	Sample Matrix: SOIL % Moisture: 0.6 Date Collected: 03-Mar-13 Date Extracted: 07-Mar-13 Date Analyzed: 11-Mar-13 Prep Method: SW3050 Rev B	Prep Batch: IP130307-3 QCBatchID: IP130307-3-1 Run ID: IT130311-2A1 Cleanup: NONE Basis: Dry Weight File Name: 130311A.	Analyst: Mike Lundgreen Sample Aliquot: 1.004 G Final Volume: 100 ML Result Units: MG/KG Clean DF: 1
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CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	830	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	1	1	U	
7440-39-3	BARIUM	1	24	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	260	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1	1	U	
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	2100	10		
7439-92-1	LEAD	1	1.4	0.3		
7439-95-4	MAGNESIUM	1	220	100		
7439-96-5	MANGANESE	1	36	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	110	100		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	2.8	1		
7440-66-6	ZINC	1	4	2		

Data Package ID: *it1303059-1*

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-BKGD-W-130303
Lab ID:	1303059-15

Sample Matrix: SOIL

% Moisture: 0.6

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.015 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	810	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	0.99	0.99	U	
7440-39-3	BARIUM	1	16	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	200	99		
7440-47-3	CHROMIUM	1	0.99	0.99	U	
7440-48-4	COBALT	1	0.99	0.99	U	
7440-50-8	COPPER	1	0.99	0.99	U	
7439-89-6	IRON	1	1800	9.9		
7439-92-1	LEAD	1	1.2	0.3		
7439-95-4	MAGNESIUM	1	180	99		
7439-96-5	MANGANESE	1	49	0.99		
7439-98-7	MOLYBDENUM	1	0.99	0.99	U	
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	160	99		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	0.99	0.99	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	2.5	0.99		
7440-66-6	ZINC	1	4	2		

Data Package ID: *it1303059-1*

Total URANIUM

Method SW6020 Revision A

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: Weston Solutions, Inc.
Client Project ID: Marquez Mine DRS
Work Order Number: 1303059 **Final Volume:** 100 ml
Reporting Basis: Dry Weight **Matrix:** SOIL
Prep Method: SW3050B **Result Units:** UG/KG
Analyst: Ross Miller

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
MQZ-35-130303	1303059-1	03/03/2013	03/07/2013	03/08/2013	2.3	100	130000	99		1.029 g
MQZ-49-130303	1303059-2	03/03/2013	03/07/2013	03/08/2013	1.7	100	11000	100		1.001 g
MQZ-51-130303	1303059-3	03/03/2013	03/07/2013	03/08/2013	2.9	100	4000000	100		1.005 g
MQZ-51-2-130303	1303059-4	03/03/2013	03/07/2013	03/08/2013	2.0	100	3200000	100		1.012 g
MQZ-52-130303	1303059-5	03/03/2013	03/07/2013	03/08/2013	1.4	100	55000	100		1.011 g
MQZ-61-130303	1303059-6	03/03/2013	03/07/2013	03/08/2013	1.8	100	270000	100		1.015 g
MQZ-62-130303	1303059-7	03/03/2013	03/07/2013	03/08/2013	1.0	100	83000	100		1.007 g
MQZ-63-130303	1303059-8	03/03/2013	03/07/2013	03/08/2013	1.6	100	3800000	100		1.005 g
MQZ-64-130303	1303059-9	03/03/2013	03/07/2013	03/08/2013	1.4	100	53000	100		1.017 g
MQZ-65-130303	1303059-10	03/03/2013	03/07/2013	03/08/2013	1.1	100	35000	99		1.026 g
MQZ-66-130303	1303059-11	03/03/2013	03/07/2013	03/08/2013	0.6	100	37000	99		1.015 g
MQZ-BKGD-E-130303	1303059-12	03/03/2013	03/07/2013	03/08/2013	1.3	100	660	100		1.017 g
MQZ-BKGD-N-130303	1303059-13	03/03/2013	03/07/2013	03/08/2013	1.6	100	820	100		1.017 g
MQZ-BKGD-S-130303	1303059-14	03/03/2013	03/07/2013	03/08/2013	0.6	100	140	100		1.004 g
MQZ-BKGD-W-130303	1303059-15	03/03/2013	03/07/2013	03/08/2013	0.6	100	170	99		1.015 g

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

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Total MERCURY

Method SW7471 Revision A

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: Weston Solutions, Inc.
Client Project ID: Marquez Mine DRS
Work Order Number: 1303059
Reporting Basis: Dry Weight
Prep Method: METHOD
Analyst: Sheri Lafferty

Final Volume: 100 g
Matrix: SOIL
Result Units: MG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
MQZ-35-130303	1303059-1	03/03/2013	03/08/2013	03/11/2013	2.3	1	0.096	0.034		0.609 g
MQZ-49-130303	1303059-2	03/03/2013	03/08/2013	03/11/2013	1.7	1	0.033	0.033	U	0.609 g
MQZ-51-130303	1303059-3	03/03/2013	03/08/2013	03/11/2013	2.9	1	0.94	0.023		0.905 g
MQZ-51-2-130303	1303059-4	03/03/2013	03/08/2013	03/11/2013	2.0	1	1.1	0.033		0.613 g
MQZ-52-130303	1303059-5	03/03/2013	03/08/2013	03/11/2013	1.4	1	0.046	0.034		0.603 g
MQZ-61-130303	1303059-6	03/03/2013	03/08/2013	03/11/2013	1.8	1	0.089	0.034		0.601 g
MQZ-62-130303	1303059-7	03/03/2013	03/08/2013	03/11/2013	1.0	1	0.066	0.033		0.607 g
MQZ-63-130303	1303059-8	03/03/2013	03/08/2013	03/11/2013	1.6	1	0.1	0.033		0.616 g
MQZ-64-130303	1303059-9	03/03/2013	03/08/2013	03/11/2013	1.4	1	0.033	0.033	U	0.61 g
MQZ-65-130303	1303059-10	03/03/2013	03/08/2013	03/11/2013	1.1	1	0.033	0.033	U	0.611 g
MQZ-66-130303	1303059-11	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.059	0.033		0.617 g
MQZ-BKGD-E-130303	1303059-12	03/03/2013	03/08/2013	03/11/2013	1.3	1	0.033	0.033	U	0.609 g
MQZ-BKGD-N-130303	1303059-13	03/03/2013	03/08/2013	03/11/2013	1.6	1	0.034	0.034	U	0.6 g
MQZ-BKGD-S-130303	1303059-14	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.033	0.033	U	0.608 g
MQZ-BKGD-W-130303	1303059-15	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.033	0.033	U	0.601 g

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: hg1303059-1

Date Printed: Tuesday, March 12, 2013

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Summary Report Forms

ICP Metals

Method SW6010B

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: IP130307-3MB

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: N/A

File Name: 130311A.

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	20	20	U	
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	1	1	U	
7440-39-3	BARIUM	1	10	10	U	
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	100	100	U	
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1	1	U	
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	10	10	U	
7439-92-1	LEAD	1	0.3	0.3	U	
7439-95-4	MAGNESIUM	1	100	100	U	
7439-96-5	MANGANESE	1	1	1	U	
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	100	100	U	
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	1	1	U	
7440-66-6	ZINC	1	2	2	U	

Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010B

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: IP130307-3LCS

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/07/2013

Date Analyzed: 03/11/2013

Prep Method: SW3050B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: N/A

File Name: 130311A.

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7429-90-5	ALUMINUM	200	194	20		97	80 - 120%
7440-36-0	ANTIMONY	50	47.5	2		95	80 - 120%
7440-38-2	ARSENIC	100	98.5	1		98	80 - 120%
7440-39-3	BARIUM	100	100	10		100	80 - 120%
7440-41-7	BERYLLIUM	5	4.86	0.5		97	80 - 120%
7440-43-9	CADMIUM	5	5.02	0.5		100	80 - 120%
7440-70-2	CALCIUM	4000	3870	100		97	80 - 120%
7440-47-3	CHROMIUM	20	19.5	1		97	80 - 120%
7440-48-4	COBALT	50	47.8	1		96	80 - 120%
7440-50-8	COPPER	25	25.4	1		102	80 - 120%
7439-89-6	IRON	100	100	10		100	80 - 120%
7439-92-1	LEAD	50	47.6	0.3		95	80 - 120%
7439-95-4	MAGNESIUM	4000	3810	100		95	80 - 120%
7439-96-5	MANGANESE	50	48.4	1		97	80 - 120%
7439-98-7	MOLYBDENUM	100	97.8	1		98	80 - 120%
7440-02-0	NICKEL	50	49.8	2		100	80 - 120%
7440-09-7	POTASSIUM	4000	3680	100		92	80 - 120%
7782-49-2	SELENIUM	200	172	0.5		86	80 - 120%
7440-22-4	SILVER	10	9.1	1		91	80 - 120%
7440-23-5	SODIUM	4000	3550	100		89	80 - 120%
7440-28-0	THALLIUM	200	190	1		95	80 - 120%
7440-31-5	TIN	50	50.5	5		101	80 - 120%
7440-62-2	VANADIUM	50	49.6	1		99	80 - 120%
7440-66-6	ZINC	50	48.2	2		96	80 - 120%

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010B

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-35-130303

LabID: 1303059-1MS

Sample Matrix: SOIL

% Moisture: 2.3

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

Sample Aliquot: 1.023 g

Final Volume: 100 ml

Result Units: MG/KG

File Name: 130311A.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	2800		4240		20	200	738	80 - 120%
7440-36-0	ANTIMONY	2	U	31.2	N	2	50	62	80 - 120%
7440-38-2	ARSENIC	92		189		1	100	97	80 - 120%
7440-39-3	BARIUM	43		146		10	100	103	80 - 120%
7440-41-7	BERYLLIUM	0.5	U	5.35		0.5	5	107	80 - 120%
7440-43-9	CADMIUM	0.5	U	5.19		0.5	5	104	80 - 120%
7440-70-2	CALCIUM	11000		16600	N	100	4000	140	80 - 120%
7440-47-3	CHROMIUM	1.2		20.7		1	20	98	80 - 120%
7440-48-4	COBALT	1.7		48.5		1	50	94	80 - 120%
7440-50-8	COPPER	2.7		29		1	25	105	80 - 120%
7439-89-6	IRON	9100		9570		10	100	498	80 - 120%
7439-92-1	LEAD	9.5		54.5		0.3	50	90	80 - 120%
7439-95-4	MAGNESIUM	900		4840		100	4000	98	80 - 120%
7439-96-5	MANGANESE	87		134		1	50	94	80 - 120%
7439-98-7	MOLYBDENUM	130		233		1	100	98	80 - 120%
7440-02-0	NICKEL	2	U	52.5		2	50	105	80 - 120%
7440-09-7	POTASSIUM	1000		5250		100	4000	105	80 - 120%
7782-49-2	SELENIUM	42		204		0.5	200	81	80 - 120%
7440-22-4	SILVER	0.99	U	9.13		1	10	91	80 - 120%
7440-23-5	SODIUM	99	U	3970		100	4000	99	80 - 120%
7440-28-0	THALLIUM	1		192		1	200	95	80 - 120%
7440-31-5	TIN	5	U	49.9		5	50	100	80 - 120%
7440-62-2	VANADIUM	120		190	N	1	50	136	80 - 120%
7440-66-6	ZINC	11		56.7		2	50	92	80 - 120%

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010B

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-35-130303

LabID: 1303059-1MSD

Sample Matrix: SOIL

% Moisture: 2.3

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

Sample Aliquot: 1.048 g

Final Volume: 100 ml

Result Units: MG/KG

File Name: 130311A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7429-90-5	ALUMINUM	4140		195	706	19.5	20	2
7440-36-0	ANTIMONY	29.1	N	48.8	60	1.95	20	7
7440-38-2	ARSENIC	179		97.7	89	0.977	20	6
7440-39-3	BARIUM	139		97.7	98	9.77	20	5
7440-41-7	BERYLLIUM	5.15		4.88	105	0.488	20	4
7440-43-9	CADMIUM	5.02		4.88	103	0.488	20	3
7440-70-2	CALCIUM	28100	N*	3910	437	97.7	20	51
7440-47-3	CHROMIUM	19.8		19.5	95	0.977	20	5
7440-48-4	COBALT	46.5		48.8	92	0.977	20	4
7440-50-8	COPPER	28.1		24.4	104	0.977	20	3
7439-89-6	IRON	9210		97.7	141	9.77	20	4
7439-92-1	LEAD	53		48.8	89	0.293	20	3
7439-95-4	MAGNESIUM	4670		3910	97	97.7	20	4
7439-96-5	MANGANESE	151	N	48.8	132	0.977	20	12
7439-98-7	MOLYBDENUM	222		97.7	90	0.977	20	5
7440-02-0	NICKEL	50		48.8	102	1.95	20	5
7440-09-7	POTASSIUM	5300		3910	109	97.7	20	1
7782-49-2	SELENIUM	200		195	81	0.488	20	2
7440-22-4	SILVER	8.82		9.77	90	0.977	20	3
7440-23-5	SODIUM	3970		3910	102	97.7	20	0
7440-28-0	THALLIUM	186		195	94	0.977	20	3
7440-31-5	TIN	48.2		48.8	99	4.88	20	3
7440-62-2	VANADIUM	183	N	48.8	127	0.977	20	3
7440-66-6	ZINC	53.7		48.8	88	1.95	20	5

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010

Analytical Spike Sample Recovery

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-35-130303

LabID: 1303059-1A

Run ID: IT130311-2A1

Date Analyzed: 11-Mar-13

Result Units: mg/l

Target Analyte	Sample Result	Samp Qual	PS Result	PS Qual	Spike Added	PS % Rec.	Control Limits
ANTIMONY	0.0200	U	0.433		0.5	87	75 - 125%
CALCIUM	111		146		40	88	75 - 125%
MANGANESE	0.872		1.29		0.5	84	75 - 125%
VANADIUM	1.22		1.62		0.5	79	75 - 125%

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

LIMS Version: 6.632

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ICP Metals

Method SW6010

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-35-130303
Lab ID:	1303059-1D

Sample Matrix: SOIL

% Moisture: 2.3

Date Collected: 03/03/2013

Date Extracted: 03/07/2013

Date Analyzed: 03/11/2013

Prep Batch: IP130307-3

QC Batch ID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Sample Aliquot: 1.004 g

Final Volume: 100 ml

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
7429-90-5	ALUMINUM	2800		2760		20.4	1	0	20
7440-36-0	ANTIMONY	2	U	2.04	U	2.04	1		20
7440-38-2	ARSENIC	92		88.2		1.02	1	4	20
7440-39-3	BARIUM	43		42.2		10.2	1		20
7440-41-7	BERYLLIUM	0.5	U	0.51	U	0.51	1		20
7440-43-9	CADMIUM	0.5	U	0.51	U	0.51	1		20
7440-70-2	CALCIUM	11000		13800	*	102	1	23	20
7440-47-3	CHROMIUM	1.2		1.18		1.02	1		20
7440-48-4	COBALT	1.7		1.58		1.02	1		20
7440-50-8	COPPER	2.7		2.75		1.02	1		20
7439-89-6	IRON	9100		9230		10.2	1	2	20
7439-92-1	LEAD	9.5		9.56		0.306	1	1	20
7439-95-4	MAGNESIUM	900		918		102	1	2	20
7439-96-5	MANGANESE	87		92.6		1.02	1	7	20
7439-98-7	MOLYBDENUM	130		130		1.02	1	3	20
7440-02-0	NICKEL	2	U	2.04	U	2.04	1		20
7440-09-7	POTASSIUM	1000		1090		102	1	4	20
7782-49-2	SELENIUM	42		38.6		0.51	1	8	20
7440-22-4	SILVER	0.99	U	1.02	U	1.02	1		20
7440-23-5	SODIUM	99	U	102	U	102	1		20
7440-28-0	THALLIUM	1		1.02	U	1.02	1		20
7440-31-5	TIN	5	U	5.1	U	5.1	1		20
7440-62-2	VANADIUM	120		109		1.02	1	11	20
7440-66-6	ZINC	11		10.8		2.04	1	2	20

Data Package ID: it1303059-1

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ICP Metals

Method SW6010

Serial Dilution

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-35-130303

Lab ID: 1303059-1L

Run ID: IT130311-2A1

Date Analyzed: 11-Mar-13

Result Units: mg/l

CASNO	Target Analyte	Sample Result	Samp Qual	SD Result	SD Qual	EPA Qualifier	%D
7429-90-5	ALUMINUM	27.8		28.6			3
7440-36-0	ANTIMONY	0.0200	U	0.100	U		
7440-38-2	ARSENIC	0.921		0.930			1
7440-39-3	BARIUM	0.431		0.500	U		
7440-41-7	BERYLLIUM	0.00500	U	0.0250	U		
7440-43-9	CADMIUM	0.00500	U	0.0250	U		
7440-70-2	CALCIUM	111		111			0
7440-47-3	CHROMIUM	0.0119		0.0500	U		
7440-48-4	COBALT	0.0168		0.0500	U		
7440-50-8	COPPER	0.0270		0.0500	U		
7439-89-6	IRON	91.2		86.9			5
7439-92-1	LEAD	0.0951		0.0886			7
7439-95-4	MAGNESIUM	9.08		9.29			
7439-96-5	MANGANESE	0.872		0.902			3
7439-98-7	MOLYBDENUM	1.35		1.39			3
7440-02-0	NICKEL	0.0200	U	0.100	U		
7440-09-7	POTASSIUM	10.4		8.26		E	21
7782-49-2	SELENIUM	0.421		0.453			7
7440-22-4	SILVER	0.0100	U	0.0500	U		
7440-23-5	SODIUM	1.00	U	5.00	U		
7440-28-0	THALLIUM	0.0105		0.0500	U		
7440-31-5	TIN	0.0500	U	0.250	U		
7440-62-2	VANADIUM	1.22		1.25			2
7440-66-6	ZINC	0.107		0.109			

Data Package ID: *it1303059-1*

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Prep Batch ID: IP130307-3

Start Date: 03/07/13

End Date: 03/07/13

Concentration Method: NONE

Batch Created By: bas

Start Time: 14:00

End Time: 18:00

Extract Method: SW3050B

Date Created: 03/07/13

Prep Analyst: Brent A. Stanfield

Initial Volume Units: g

Time Created: 13:22

Comments:

Final Volume Units: ml

Validated By: bas

Date Validated: 03/07/13

Time Validated: 13:50

QC Batch ID: IP130307-3-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
IP130307-3	MB	XXXXXX	SOIL	XXXXXX	1	100	NONE	1	1303059
IP130307-3	LCS	XXXXXX	SOIL	XXXXXX	1	100	NONE	1	1303059
1303059-1	MS	MQZ-35-130303	SOIL	3/3/2013	1.023	100	NONE	1	1303059
1303059-1	MSD	MQZ-35-130303	SOIL	3/3/2013	1.048	100	NONE	1	1303059
1303059-1	DUP	MQZ-35-130303	SOIL	3/3/2013	1.004	100	NONE	1	1303059
1303059-1	SMP	MQZ-35-130303	SOIL	3/3/2013	1.029	100	NONE	1	1303059
1303059-10	SMP	MQZ-65-130303	SOIL	3/3/2013	1.026	100	NONE	1	1303059
1303059-11	SMP	MQZ-66-130303	SOIL	3/3/2013	1.015	100	NONE	1	1303059
1303059-12	SMP	MQZ-BKGD-E-130303	SOIL	3/3/2013	1.017	100	NONE	1	1303059
1303059-13	SMP	MQZ-BKGD-N-130303	SOIL	3/3/2013	1.017	100	NONE	1	1303059
1303059-14	SMP	MQZ-BKGD-S-130303	SOIL	3/3/2013	1.004	100	NONE	1	1303059
1303059-15	SMP	MQZ-BKGD-W-130303	SOIL	3/3/2013	1.015	100	NONE	1	1303059
1303059-2	SMP	MQZ-49-130303	SOIL	3/3/2013	1.001	100	NONE	1	1303059
1303059-3	SMP	MQZ-51-130303	SOIL	3/3/2013	1.005	100	NONE	1	1303059
1303059-4	SMP	MQZ-51-2-130303	SOIL	3/3/2013	1.012	100	NONE	1	1303059
1303059-5	SMP	MQZ-52-130303	SOIL	3/3/2013	1.011	100	NONE	1	1303059
1303059-6	SMP	MQZ-61-130303	SOIL	3/3/2013	1.015	100	NONE	1	1303059
1303059-7	SMP	MQZ-62-130303	SOIL	3/3/2013	1.007	100	NONE	1	1303059
1303059-8	SMP	MQZ-63-130303	SOIL	3/3/2013	1.005	100	NONE	1	1303059
1303059-9	SMP	MQZ-64-130303	SOIL	3/3/2013	1.017	100	NONE	1	1303059

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicate
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standard	SMP	Field Sample
SYS	Sample Yield Spike		

ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: ICV

QC Type: Initial Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 12:35

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	25	25.8	0.2		103	90 - 110%
7440-36-0	ANTIMONY	0.25	0.250	0.02		100	90 - 110%
7440-38-2	ARSENIC	0.25	0.262	0.01		105	90 - 110%
7440-39-3	BARIUM	0.5	0.522	0.1		104	90 - 110%
7440-41-7	BERYLLIUM	0.25	0.255	0.005		102	90 - 110%
7440-43-9	CADMIUM	0.25	0.258	0.005		103	90 - 110%
7440-70-2	CALCIUM	25	25.7	1		103	90 - 110%
7440-47-3	CHROMIUM	0.5	0.506	0.01		101	90 - 110%
7440-48-4	COBALT	0.25	0.250	0.01		100	90 - 110%
7440-50-8	COPPER	0.5	0.513	0.01		103	90 - 110%
7439-89-6	IRON	10	10.3	0.1		103	90 - 110%
7439-92-1	LEAD	0.5	0.500	0.003		100	90 - 110%
7439-95-4	MAGNESIUM	25	25.2	1		101	90 - 110%
7439-96-5	MANGANESE	0.5	0.502	0.01		100	90 - 110%
7439-98-7	MOLYBDENUM	0.5	0.498	0.01		100	90 - 110%
7440-02-0	NICKEL	0.5	0.505	0.02		101	90 - 110%
7440-09-7	POTASSIUM	25	23.7	1		95	90 - 110%
7782-49-2	SELENIUM	0.5	0.513	0.005		103	90 - 110%
7440-22-4	SILVER	0.1	0.0993	0.01		99	90 - 110%
7440-23-5	SODIUM	25	23.4	1		93	90 - 110%
7440-28-0	THALLIUM	0.25	0.251	0.01		101	90 - 110%
7440-31-5	TIN	0.5	0.518	0.05		104	90 - 110%
7440-62-2	VANADIUM	0.25	0.250	0.01		100	90 - 110%
7440-66-6	ZINC	0.5	0.495	0.02		99	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV1

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 12:44

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	49.7	0.2		99	90 - 110%
7440-36-0	ANTIMONY	0.5	0.485	0.02		97	90 - 110%
7440-38-2	ARSENIC	0.5	0.509	0.01		102	90 - 110%
7440-39-3	BARIUM	1	1.01	0.1		101	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.486	0.005		97	90 - 110%
7440-43-9	CADMIUM	0.5	0.505	0.005		101	90 - 110%
7440-70-2	CALCIUM	50	50.0	1		100	90 - 110%
7440-47-3	CHROMIUM	1	0.969	0.01		97	90 - 110%
7440-48-4	COBALT	0.5	0.480	0.01		96	90 - 110%
7440-50-8	COPPER	1	0.992	0.01		99	90 - 110%
7439-89-6	IRON	20	20.1	0.1		100	90 - 110%
7439-92-1	LEAD	1	0.963	0.003		96	90 - 110%
7439-95-4	MAGNESIUM	50	49.1	1		98	90 - 110%
7439-96-5	MANGANESE	1	0.961	0.01		96	90 - 110%
7439-98-7	MOLYBDENUM	1	0.969	0.01		97	90 - 110%
7440-02-0	NICKEL	1	0.980	0.02		98	90 - 110%
7440-09-7	POTASSIUM	50	48.9	1		98	90 - 110%
7782-49-2	SELENIUM	1	0.983	0.005		98	90 - 110%
7440-22-4	SILVER	0.2	0.193	0.01		96	90 - 110%
7440-23-5	SODIUM	50	47.7	1		95	90 - 110%
7440-28-0	THALLIUM	0.5	0.513	0.01		103	90 - 110%
7440-31-5	TIN	1	1.02	0.05		102	90 - 110%
7440-62-2	VANADIUM	0.5	0.482	0.01		96	90 - 110%
7440-66-6	ZINC	1	0.947	0.02		95	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV2

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 13:10

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.0	0.2		100	90 - 110%
7440-36-0	ANTIMONY	0.5	0.497	0.02		99	90 - 110%
7440-38-2	ARSENIC	0.5	0.523	0.01		105	90 - 110%
7440-39-3	BARIUM	1	1.03	0.1		103	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.490	0.005		98	90 - 110%
7440-43-9	CADMIUM	0.5	0.514	0.005		103	90 - 110%
7440-70-2	CALCIUM	50	50.6	1		101	90 - 110%
7440-47-3	CHROMIUM	1	0.976	0.01		98	90 - 110%
7440-48-4	COBALT	0.5	0.485	0.01		97	90 - 110%
7440-50-8	COPPER	1	1.01	0.01		101	90 - 110%
7439-89-6	IRON	20	20.2	0.1		101	90 - 110%
7439-92-1	LEAD	1	0.967	0.003		97	90 - 110%
7439-95-4	MAGNESIUM	50	49.4	1		99	90 - 110%
7439-96-5	MANGANESE	1	0.966	0.01		97	90 - 110%
7439-98-7	MOLYBDENUM	1	0.983	0.01		98	90 - 110%
7440-02-0	NICKEL	1	1.01	0.02		101	90 - 110%
7440-09-7	POTASSIUM	50	49.3	1		99	90 - 110%
7782-49-2	SELENIUM	1	0.990	0.005		99	90 - 110%
7440-22-4	SILVER	0.2	0.195	0.01		98	90 - 110%
7440-23-5	SODIUM	50	48.3	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.513	0.01		103	90 - 110%
7440-31-5	TIN	1	1.04	0.05		104	90 - 110%
7440-62-2	VANADIUM	0.5	0.485	0.01		97	90 - 110%
7440-66-6	ZINC	1	0.956	0.02		96	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV3

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 13:32

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	49.0	0.2		98	90 - 110%
7440-36-0	ANTIMONY	0.5	0.488	0.02		98	90 - 110%
7440-38-2	ARSENIC	0.5	0.514	0.01		103	90 - 110%
7440-39-3	BARIUM	1	1.01	0.1		101	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.475	0.005		95	90 - 110%
7440-43-9	CADMIUM	0.5	0.511	0.005		102	90 - 110%
7440-70-2	CALCIUM	50	49.3	1		99	90 - 110%
7440-47-3	CHROMIUM	1	0.951	0.01		95	90 - 110%
7440-48-4	COBALT	0.5	0.474	0.01		95	90 - 110%
7440-50-8	COPPER	1	0.997	0.01		100	90 - 110%
7439-89-6	IRON	20	19.5	0.1		97	90 - 110%
7439-92-1	LEAD	1	0.937	0.003		94	90 - 110%
7439-95-4	MAGNESIUM	50	48.1	1		96	90 - 110%
7439-96-5	MANGANESE	1	0.937	0.01		94	90 - 110%
7439-98-7	MOLYBDENUM	1	0.962	0.01		96	90 - 110%
7440-02-0	NICKEL	1	0.998	0.02		100	90 - 110%
7440-09-7	POTASSIUM	50	48.8	1		98	90 - 110%
7782-49-2	SELENIUM	1	0.957	0.005		96	90 - 110%
7440-22-4	SILVER	0.2	0.191	0.01		96	90 - 110%
7440-23-5	SODIUM	50	48.0	1		96	90 - 110%
7440-28-0	THALLIUM	0.5	0.498	0.01		100	90 - 110%
7440-31-5	TIN	1	1.01	0.05		101	90 - 110%
7440-62-2	VANADIUM	0.5	0.475	0.01		95	90 - 110%
7440-66-6	ZINC	1	0.921	0.02		92	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV4

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 13:54

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	49.1	0.2		98	90 - 110%
7440-36-0	ANTIMONY	0.5	0.493	0.02		99	90 - 110%
7440-38-2	ARSENIC	0.5	0.521	0.01		104	90 - 110%
7440-39-3	BARIUM	1	1.01	0.1		101	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.477	0.005		95	90 - 110%
7440-43-9	CADMIUM	0.5	0.519	0.005		104	90 - 110%
7440-70-2	CALCIUM	50	49.7	1		99	90 - 110%
7440-47-3	CHROMIUM	1	0.957	0.01		96	90 - 110%
7440-48-4	COBALT	0.5	0.478	0.01		96	90 - 110%
7440-50-8	COPPER	1	1.01	0.01		101	90 - 110%
7439-89-6	IRON	20	19.5	0.1		98	90 - 110%
7439-92-1	LEAD	1	0.937	0.003		94	90 - 110%
7439-95-4	MAGNESIUM	50	48.4	1		97	90 - 110%
7439-96-5	MANGANESE	1	0.939	0.01		94	90 - 110%
7439-98-7	MOLYBDENUM	1	0.970	0.01		97	90 - 110%
7440-02-0	NICKEL	1	1.02	0.02		102	90 - 110%
7440-09-7	POTASSIUM	50	49.1	1		98	90 - 110%
7782-49-2	SELENIUM	1	0.966	0.005		97	90 - 110%
7440-22-4	SILVER	0.2	0.194	0.01		97	90 - 110%
7440-23-5	SODIUM	50	48.3	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.519	0.01		104	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.477	0.01		95	90 - 110%
7440-66-6	ZINC	1	0.921	0.02		92	90 - 110%

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV5

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 15:23

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	48.8	0.2		98	90 - 110%
7440-36-0	ANTIMONY	0.5	0.492	0.02		98	90 - 110%
7440-38-2	ARSENIC	0.5	0.518	0.01		104	90 - 110%
7440-39-3	BARIUM	1	0.991	0.1		99	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.478	0.005		96	90 - 110%
7440-43-9	CADMIUM	0.5	0.516	0.005		103	90 - 110%
7440-70-2	CALCIUM	50	48.8	1		98	90 - 110%
7440-47-3	CHROMIUM	1	0.958	0.01		96	90 - 110%
7440-48-4	COBALT	0.5	0.482	0.01		96	90 - 110%
7440-50-8	COPPER	1	1.01	0.01		101	90 - 110%
7439-89-6	IRON	20	19.1	0.1		95	90 - 110%
7439-92-1	LEAD	1	0.933	0.003		93	90 - 110%
7439-95-4	MAGNESIUM	50	47.5	1		95	90 - 110%
7439-96-5	MANGANESE	1	0.951	0.01		95	90 - 110%
7439-98-7	MOLYBDENUM	1	0.962	0.01		96	90 - 110%
7440-02-0	NICKEL	1	1.01	0.02		101	90 - 110%
7440-09-7	POTASSIUM	50	49.3	1		99	90 - 110%
7782-49-2	SELENIUM	1	0.963	0.005		96	90 - 110%
7440-22-4	SILVER	0.2	0.198	0.01		99	90 - 110%
7440-23-5	SODIUM	50	48.5	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.514	0.01		103	90 - 110%
7440-31-5	TIN	1	1.02	0.05		102	90 - 110%
7440-62-2	VANADIUM	0.5	0.479	0.01		96	90 - 110%
7440-66-6	ZINC	1	0.937	0.02		94	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV6

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 15:35

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	48.7	0.2		97	90 - 110%
7440-36-0	ANTIMONY	0.5	0.483	0.02		97	90 - 110%
7440-38-2	ARSENIC	0.5	0.509	0.01		102	90 - 110%
7440-39-3	BARIUM	1	0.995	0.1		100	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.477	0.005		95	90 - 110%
7440-43-9	CADMIUM	0.5	0.516	0.005		103	90 - 110%
7440-70-2	CALCIUM	50	48.9	1		98	90 - 110%
7440-47-3	CHROMIUM	1	0.958	0.01		96	90 - 110%
7440-48-4	COBALT	0.5	0.481	0.01		96	90 - 110%
7440-50-8	COPPER	1	1.01	0.01		101	90 - 110%
7439-89-6	IRON	20	19.1	0.1		96	90 - 110%
7439-92-1	LEAD	1	0.929	0.003		93	90 - 110%
7439-95-4	MAGNESIUM	50	47.5	1		95	90 - 110%
7439-96-5	MANGANESE	1	0.950	0.01		95	90 - 110%
7439-98-7	MOLYBDENUM	1	0.968	0.01		97	90 - 110%
7440-02-0	NICKEL	1	1.01	0.02		101	90 - 110%
7440-09-7	POTASSIUM	50	49.0	1		98	90 - 110%
7782-49-2	SELENIUM	1	0.951	0.005		95	90 - 110%
7440-22-4	SILVER	0.2	0.198	0.01		99	90 - 110%
7440-23-5	SODIUM	50	48.4	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.505	0.01		101	90 - 110%
7440-31-5	TIN	1	1.01	0.05		101	90 - 110%
7440-62-2	VANADIUM	0.5	0.478	0.01		96	90 - 110%
7440-66-6	ZINC	1	0.934	0.02		93	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV7

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 15:55

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	49.2	0.2		98	90 - 110%
7440-36-0	ANTIMONY	0.5	0.498	0.02		100	90 - 110%
7440-38-2	ARSENIC	0.5	0.525	0.01		105	90 - 110%
7440-39-3	BARIUM	1	1.01	0.1		101	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.495	0.005		99	90 - 110%
7440-43-9	CADMIUM	0.5	0.524	0.005		105	90 - 110%
7440-70-2	CALCIUM	50	49.5	1		99	90 - 110%
7440-47-3	CHROMIUM	1	0.989	0.01		99	90 - 110%
7440-48-4	COBALT	0.5	0.493	0.01		99	90 - 110%
7440-50-8	COPPER	1	1.02	0.01		102	90 - 110%
7439-89-6	IRON	20	19.4	0.1		97	90 - 110%
7439-92-1	LEAD	1	0.975	0.003		97	90 - 110%
7439-95-4	MAGNESIUM	50	49.0	1		98	90 - 110%
7439-96-5	MANGANESE	1	0.978	0.01		98	90 - 110%
7439-98-7	MOLYBDENUM	1	0.995	0.01		99	90 - 110%
7440-02-0	NICKEL	1	1.03	0.02		103	90 - 110%
7440-09-7	POTASSIUM	50	49.3	1		99	90 - 110%
7782-49-2	SELENIUM	1	0.981	0.005		98	90 - 110%
7440-22-4	SILVER	0.2	0.199	0.01		99	90 - 110%
7440-23-5	SODIUM	50	48.7	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.515	0.01		103	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.493	0.01		99	90 - 110%
7440-66-6	ZINC	1	0.962	0.02		96	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV8

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 16:17

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	49.2	0.2		98	90 - 110%
7440-36-0	ANTIMONY	0.5	0.496	0.02		99	90 - 110%
7440-38-2	ARSENIC	0.5	0.526	0.01		105	90 - 110%
7440-39-3	BARIUM	1	1.01	0.1		101	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.496	0.005		99	90 - 110%
7440-43-9	CADMIUM	0.5	0.525	0.005		105	90 - 110%
7440-70-2	CALCIUM	50	49.7	1		99	90 - 110%
7440-47-3	CHROMIUM	1	0.992	0.01		99	90 - 110%
7440-48-4	COBALT	0.5	0.494	0.01		99	90 - 110%
7440-50-8	COPPER	1	1.02	0.01		102	90 - 110%
7439-89-6	IRON	20	19.4	0.1		97	90 - 110%
7439-92-1	LEAD	1	0.973	0.003		97	90 - 110%
7439-95-4	MAGNESIUM	50	49.1	1		98	90 - 110%
7439-96-5	MANGANESE	1	0.981	0.01		98	90 - 110%
7439-98-7	MOLYBDENUM	1	1.00	0.01		100	90 - 110%
7440-02-0	NICKEL	1	1.03	0.02		103	90 - 110%
7440-09-7	POTASSIUM	50	49.5	1		99	90 - 110%
7782-49-2	SELENIUM	1	0.969	0.005		97	90 - 110%
7440-22-4	SILVER	0.2	0.201	0.01		100	90 - 110%
7440-23-5	SODIUM	50	48.8	1		98	90 - 110%
7440-28-0	THALLIUM	0.5	0.517	0.01		103	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.496	0.01		99	90 - 110%
7440-66-6	ZINC	1	0.969	0.02		97	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV9

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 16:39

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	49.5	0.2		99	90 - 110%
7440-36-0	ANTIMONY	0.5	0.504	0.02		101	90 - 110%
7440-38-2	ARSENIC	0.5	0.527	0.01		105	90 - 110%
7440-39-3	BARIUM	1	1.01	0.1		101	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.499	0.005		100	90 - 110%
7440-43-9	CADMIUM	0.5	0.532	0.005		106	90 - 110%
7440-70-2	CALCIUM	50	50.1	1		100	90 - 110%
7440-47-3	CHROMIUM	1	1.00	0.01		100	90 - 110%
7440-48-4	COBALT	0.5	0.499	0.01		100	90 - 110%
7440-50-8	COPPER	1	1.03	0.01		103	90 - 110%
7439-89-6	IRON	20	19.5	0.1		98	90 - 110%
7439-92-1	LEAD	1	0.979	0.003		98	90 - 110%
7439-95-4	MAGNESIUM	50	49.6	1		99	90 - 110%
7439-96-5	MANGANESE	1	0.987	0.01		99	90 - 110%
7439-98-7	MOLYBDENUM	1	1.01	0.01		101	90 - 110%
7440-02-0	NICKEL	1	1.05	0.02		105	90 - 110%
7440-09-7	POTASSIUM	50	49.7	1		99	90 - 110%
7782-49-2	SELENIUM	1	0.983	0.005		98	90 - 110%
7440-22-4	SILVER	0.2	0.202	0.01		101	90 - 110%
7440-23-5	SODIUM	50	49.1	1		98	90 - 110%
7440-28-0	THALLIUM	0.5	0.517	0.01		103	90 - 110%
7440-31-5	TIN	1	1.05	0.05		105	90 - 110%
7440-62-2	VANADIUM	0.5	0.498	0.01		100	90 - 110%
7440-66-6	ZINC	1	0.979	0.02		98	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV10

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 17:21

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.9	0.2		102	90 - 110%
7440-36-0	ANTIMONY	0.5	0.483	0.02		97	90 - 110%
7440-38-2	ARSENIC	0.5	0.521	0.01		104	90 - 110%
7440-39-3	BARIUM	1	1.02	0.1		102	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.500	0.005		100	90 - 110%
7440-43-9	CADMIUM	0.5	0.501	0.005		100	90 - 110%
7440-70-2	CALCIUM	50	50.7	1		101	90 - 110%
7440-47-3	CHROMIUM	1	0.992	0.01		99	90 - 110%
7440-48-4	COBALT	0.5	0.491	0.01		98	90 - 110%
7440-50-8	COPPER	1	1.01	0.01		101	90 - 110%
7439-89-6	IRON	20	20.2	0.1		101	90 - 110%
7439-92-1	LEAD	1	0.985	0.003		98	90 - 110%
7439-95-4	MAGNESIUM	50	50.4	1		101	90 - 110%
7439-96-5	MANGANESE	1	0.985	0.01		99	90 - 110%
7439-98-7	MOLYBDENUM	1	0.980	0.01		98	90 - 110%
7440-02-0	NICKEL	1	0.973	0.02		97	90 - 110%
7440-09-7	POTASSIUM	50	49.1	1		98	90 - 110%
7782-49-2	SELENIUM	1	1.01	0.005		101	90 - 110%
7440-22-4	SILVER	0.2	0.195	0.01		97	90 - 110%
7440-23-5	SODIUM	50	48.6	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.510	0.01		102	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.491	0.01		98	90 - 110%
7440-66-6	ZINC	1	1.01	0.02		101	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV11

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 17:33

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.8	0.2		102	90 - 110%
7440-36-0	ANTIMONY	0.5	0.483	0.02		97	90 - 110%
7440-38-2	ARSENIC	0.5	0.522	0.01		104	90 - 110%
7440-39-3	BARIUM	1	1.01	0.1		101	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.499	0.005		100	90 - 110%
7440-43-9	CADMIUM	0.5	0.502	0.005		100	90 - 110%
7440-70-2	CALCIUM	50	50.6	1		101	90 - 110%
7440-47-3	CHROMIUM	1	0.989	0.01		99	90 - 110%
7440-48-4	COBALT	0.5	0.491	0.01		98	90 - 110%
7440-50-8	COPPER	1	1.01	0.01		101	90 - 110%
7439-89-6	IRON	20	20.2	0.1		101	90 - 110%
7439-92-1	LEAD	1	0.974	0.003		97	90 - 110%
7439-95-4	MAGNESIUM	50	50.4	1		101	90 - 110%
7439-96-5	MANGANESE	1	0.984	0.01		98	90 - 110%
7439-98-7	MOLYBDENUM	1	0.981	0.01		98	90 - 110%
7440-02-0	NICKEL	1	0.971	0.02		97	90 - 110%
7440-09-7	POTASSIUM	50	49.1	1		98	90 - 110%
7782-49-2	SELENIUM	1	1.00	0.005		100	90 - 110%
7440-22-4	SILVER	0.2	0.195	0.01		98	90 - 110%
7440-23-5	SODIUM	50	48.6	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.517	0.01		103	90 - 110%
7440-31-5	TIN	1	1.04	0.05		104	90 - 110%
7440-62-2	VANADIUM	0.5	0.490	0.01		98	90 - 110%
7440-66-6	ZINC	1	1.01	0.02		101	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV12

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 17:55

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.7	0.2		101	90 - 110%
7440-36-0	ANTIMONY	0.5	0.485	0.02		97	90 - 110%
7440-38-2	ARSENIC	0.5	0.520	0.01		104	90 - 110%
7440-39-3	BARIUM	1	1.02	0.1		102	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.498	0.005		100	90 - 110%
7440-43-9	CADMIUM	0.5	0.502	0.005		100	90 - 110%
7440-70-2	CALCIUM	50	50.5	1		101	90 - 110%
7440-47-3	CHROMIUM	1	0.987	0.01		99	90 - 110%
7440-48-4	COBALT	0.5	0.489	0.01		98	90 - 110%
7440-50-8	COPPER	1	1.01	0.01		101	90 - 110%
7439-89-6	IRON	20	20.2	0.1		101	90 - 110%
7439-92-1	LEAD	1	0.979	0.003		98	90 - 110%
7439-95-4	MAGNESIUM	50	50.3	1		101	90 - 110%
7439-96-5	MANGANESE	1	0.982	0.01		98	90 - 110%
7439-98-7	MOLYBDENUM	1	0.980	0.01		98	90 - 110%
7440-02-0	NICKEL	1	0.973	0.02		97	90 - 110%
7440-09-7	POTASSIUM	50	48.9	1		98	90 - 110%
7782-49-2	SELENIUM	1	1.00	0.005		100	90 - 110%
7440-22-4	SILVER	0.2	0.194	0.01		97	90 - 110%
7440-23-5	SODIUM	50	48.5	1		97	90 - 110%
7440-28-0	THALLIUM	0.5	0.506	0.01		101	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.490	0.01		98	90 - 110%
7440-66-6	ZINC	1	1.01	0.02		101	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV13

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 18:17

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	49.5	0.2		99	90 - 110%
7440-36-0	ANTIMONY	0.5	0.467	0.02		93	90 - 110%
7440-38-2	ARSENIC	0.5	0.503	0.01		101	90 - 110%
7440-39-3	BARIUM	1	0.982	0.1		98	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.487	0.005		97	90 - 110%
7440-43-9	CADMIUM	0.5	0.489	0.005		98	90 - 110%
7440-70-2	CALCIUM	50	49.3	1		99	90 - 110%
7440-47-3	CHROMIUM	1	0.968	0.01		97	90 - 110%
7440-48-4	COBALT	0.5	0.478	0.01		96	90 - 110%
7440-50-8	COPPER	1	0.980	0.01		98	90 - 110%
7439-89-6	IRON	20	19.6	0.1		98	90 - 110%
7439-92-1	LEAD	1	0.952	0.003		95	90 - 110%
7439-95-4	MAGNESIUM	50	49.1	1		98	90 - 110%
7439-96-5	MANGANESE	1	0.959	0.01		96	90 - 110%
7439-98-7	MOLYBDENUM	1	0.954	0.01		95	90 - 110%
7440-02-0	NICKEL	1	0.945	0.02		95	90 - 110%
7440-09-7	POTASSIUM	50	48.1	1		96	90 - 110%
7782-49-2	SELENIUM	1	0.972	0.005		97	90 - 110%
7440-22-4	SILVER	0.2	0.191	0.01		96	90 - 110%
7440-23-5	SODIUM	50	47.7	1		95	90 - 110%
7440-28-0	THALLIUM	0.5	0.504	0.01		101	90 - 110%
7440-31-5	TIN	1	1.00	0.05		100	90 - 110%
7440-62-2	VANADIUM	0.5	0.478	0.01		96	90 - 110%
7440-66-6	ZINC	1	0.984	0.02		98	90 - 110%

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV14

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 18:38

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.2	0.2		100	90 - 110%
7440-36-0	ANTIMONY	0.5	0.476	0.02		95	90 - 110%
7440-38-2	ARSENIC	0.5	0.514	0.01		103	90 - 110%
7440-39-3	BARIUM	1	0.998	0.1		100	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.496	0.005		99	90 - 110%
7440-43-9	CADMIUM	0.5	0.498	0.005		100	90 - 110%
7440-70-2	CALCIUM	50	50.3	1		101	90 - 110%
7440-47-3	CHROMIUM	1	0.983	0.01		98	90 - 110%
7440-48-4	COBALT	0.5	0.487	0.01		97	90 - 110%
7440-50-8	COPPER	1	0.998	0.01		100	90 - 110%
7439-89-6	IRON	20	20.0	0.1		100	90 - 110%
7439-92-1	LEAD	1	0.977	0.003		98	90 - 110%
7439-95-4	MAGNESIUM	50	50.0	1		100	90 - 110%
7439-96-5	MANGANESE	1	0.976	0.01		98	90 - 110%
7439-98-7	MOLYBDENUM	1	0.973	0.01		97	90 - 110%
7440-02-0	NICKEL	1	0.964	0.02		96	90 - 110%
7440-09-7	POTASSIUM	50	48.6	1		97	90 - 110%
7782-49-2	SELENIUM	1	0.997	0.005		100	90 - 110%
7440-22-4	SILVER	0.2	0.193	0.01		97	90 - 110%
7440-23-5	SODIUM	50	48.1	1		96	90 - 110%
7440-28-0	THALLIUM	0.5	0.508	0.01		102	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.486	0.01		97	90 - 110%
7440-66-6	ZINC	1	1.01	0.02		101	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV15

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 19:14

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.2	0.2		100	90 - 110%
7440-36-0	ANTIMONY	0.5	0.478	0.02		96	90 - 110%
7440-38-2	ARSENIC	0.5	0.519	0.01		104	90 - 110%
7440-39-3	BARIUM	1	0.998	0.1		100	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.496	0.005		99	90 - 110%
7440-43-9	CADMIUM	0.5	0.499	0.005		100	90 - 110%
7440-70-2	CALCIUM	50	50.3	1		101	90 - 110%
7440-47-3	CHROMIUM	1	0.984	0.01		98	90 - 110%
7440-48-4	COBALT	0.5	0.488	0.01		98	90 - 110%
7440-50-8	COPPER	1	0.998	0.01		100	90 - 110%
7439-89-6	IRON	20	20.0	0.1		100	90 - 110%
7439-92-1	LEAD	1	0.979	0.003		98	90 - 110%
7439-95-4	MAGNESIUM	50	50.0	1		100	90 - 110%
7439-96-5	MANGANESE	1	0.975	0.01		98	90 - 110%
7439-98-7	MOLYBDENUM	1	0.976	0.01		98	90 - 110%
7440-02-0	NICKEL	1	0.967	0.02		97	90 - 110%
7440-09-7	POTASSIUM	50	48.5	1		97	90 - 110%
7782-49-2	SELENIUM	1	1.00	0.005		100	90 - 110%
7440-22-4	SILVER	0.2	0.194	0.01		97	90 - 110%
7440-23-5	SODIUM	50	48.1	1		96	90 - 110%
7440-28-0	THALLIUM	0.5	0.502	0.01		100	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.487	0.01		97	90 - 110%
7440-66-6	ZINC	1	1.01	0.02		101	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV16

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 19:35

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.3	0.2		101	90 - 110%
7440-36-0	ANTIMONY	0.5	0.479	0.02		96	90 - 110%
7440-38-2	ARSENIC	0.5	0.512	0.01		102	90 - 110%
7440-39-3	BARIUM	1	1.00	0.1		100	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.494	0.005		99	90 - 110%
7440-43-9	CADMIUM	0.5	0.500	0.005		100	90 - 110%
7440-70-2	CALCIUM	50	50.1	1		100	90 - 110%
7440-47-3	CHROMIUM	1	0.980	0.01		98	90 - 110%
7440-48-4	COBALT	0.5	0.486	0.01		97	90 - 110%
7440-50-8	COPPER	1	1.00	0.01		100	90 - 110%
7439-89-6	IRON	20	19.9	0.1		100	90 - 110%
7439-92-1	LEAD	1	0.973	0.003		97	90 - 110%
7439-95-4	MAGNESIUM	50	49.8	1		100	90 - 110%
7439-96-5	MANGANESE	1	0.972	0.01		97	90 - 110%
7439-98-7	MOLYBDENUM	1	0.976	0.01		98	90 - 110%
7440-02-0	NICKEL	1	0.966	0.02		97	90 - 110%
7440-09-7	POTASSIUM	50	48.6	1		97	90 - 110%
7782-49-2	SELENIUM	1	1.00	0.005		100	90 - 110%
7440-22-4	SILVER	0.2	0.194	0.01		97	90 - 110%
7440-23-5	SODIUM	50	48.2	1		96	90 - 110%
7440-28-0	THALLIUM	0.5	0.508	0.01		102	90 - 110%
7440-31-5	TIN	1	1.03	0.05		103	90 - 110%
7440-62-2	VANADIUM	0.5	0.485	0.01		97	90 - 110%
7440-66-6	ZINC	1	1.00	0.02		100	90 - 110%

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ICP Metals

Method SW6010

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCV17

QC Type: Continuing Calibration

File Name: 130311A.

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 19:50

Result Units: MG/L

CASNO	Target Analyte	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
7429-90-5	ALUMINUM	50	50.4	0.2		101	90 - 110%
7440-36-0	ANTIMONY	0.5	0.481	0.02		96	90 - 110%
7440-38-2	ARSENIC	0.5	0.521	0.01		104	90 - 110%
7440-39-3	BARIUM	1	1.00	0.1		100	90 - 110%
7440-41-7	BERYLLIUM	0.5	0.499	0.005		100	90 - 110%
7440-43-9	CADMIUM	0.5	0.501	0.005		100	90 - 110%
7440-70-2	CALCIUM	50	50.6	1		101	90 - 110%
7440-47-3	CHROMIUM	1	0.989	0.01		99	90 - 110%
7440-48-4	COBALT	0.5	0.491	0.01		98	90 - 110%
7440-50-8	COPPER	1	1.00	0.01		100	90 - 110%
7439-89-6	IRON	20	20.1	0.1		100	90 - 110%
7439-92-1	LEAD	1	0.979	0.003		98	90 - 110%
7439-95-4	MAGNESIUM	50	50.4	1		101	90 - 110%
7439-96-5	MANGANESE	1	0.981	0.01		98	90 - 110%
7439-98-7	MOLYBDENUM	1	0.979	0.01		98	90 - 110%
7440-02-0	NICKEL	1	0.975	0.02		97	90 - 110%
7440-09-7	POTASSIUM	50	48.6	1		97	90 - 110%
7782-49-2	SELENIUM	1	1.01	0.005		101	90 - 110%
7440-22-4	SILVER	0.2	0.195	0.01		97	90 - 110%
7440-23-5	SODIUM	50	48.1	1		96	90 - 110%
7440-28-0	THALLIUM	0.5	0.511	0.01		102	90 - 110%
7440-31-5	TIN	1	1.04	0.05		104	90 - 110%
7440-62-2	VANADIUM	0.5	0.489	0.01		98	90 - 110%
7440-66-6	ZINC	1	1.02	0.02		102	90 - 110%

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: ICB

QC Type: Initial Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 12:37:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB1

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 12:51:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB2

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 1:12:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB3

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 1:34:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB4

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 3:21:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB5

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 3:25:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB6

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 3:37:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB7

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 3:57:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB8

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 4:19:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB9

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 4:40:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB10

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 5:23:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB11

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 5:36:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB12

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 5:57:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.00552	0.005	
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB13

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 6:18:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB14

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 6:52:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB15

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 7:15:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB16

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 7:37:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICP Metals

Method SW6010

Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: CCB17

QC Type: Continuing Calibration

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Time Analyzed: 7:52:00 PM

Result Units: MG/L

CASNO	Target Analyte	Result	Reporting Limit	Result Qualifier
7429-90-5	ALUMINUM	0.2	0.2	U
7440-36-0	ANTIMONY	0.02	0.02	U
7440-38-2	ARSENIC	0.01	0.01	U
7440-39-3	BARIUM	0.1	0.1	U
7440-41-7	BERYLLIUM	0.005	0.005	U
7440-43-9	CADMIUM	0.005	0.005	U
7440-70-2	CALCIUM	1	1	U
7440-47-3	CHROMIUM	0.01	0.01	U
7440-48-4	COBALT	0.01	0.01	U
7440-50-8	COPPER	0.01	0.01	U
7439-89-6	IRON	0.1	0.1	U
7439-92-1	LEAD	0.003	0.003	U
7439-95-4	MAGNESIUM	1	1	U
7439-96-5	MANGANESE	0.01	0.01	U
7439-98-7	MOLYBDENUM	0.01	0.01	U
7440-02-0	NICKEL	0.02	0.02	U
7440-09-7	POTASSIUM	1	1	U
7782-49-2	SELENIUM	0.005	0.005	U
7440-22-4	SILVER	0.01	0.01	U
7440-23-5	SODIUM	1	1	U
7440-28-0	THALLIUM	0.01	0.01	U
7440-31-5	TIN	0.05	0.05	U
7440-62-2	VANADIUM	0.01	0.01	U
7440-66-6	ZINC	0.02	0.02	U

Data Package ID: *it1303059-1*

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ICP Metals

Method SW6010

ICP Interference Check Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Result Units: MG/L

CASNO	Target Analyte	Spike Added		Results		% Rec.
		ICSA1	ICSAB1	ICSA1	ICSAB1	
7429-90-5	ALUMINUM	250	250	273	262	105
7440-36-0	ANTIMONY		0.6		0.59200	99
7440-38-2	ARSENIC		0.1		0.10400	104
7440-39-3	BARIUM		0.5		0.50900	102
7440-41-7	BERYLLIUM		0.5		0.49300	99
7440-43-9	CADMIUM		1		1	100
7440-70-2	CALCIUM	250	250	269	259	103
7440-47-3	CHROMIUM		0.5		0.47900	96
7440-48-4	COBALT		0.5		0.47600	95
7440-50-8	COPPER		0.5		0.533	107
7439-89-6	IRON	100	100	110	106	106
7439-92-1	LEAD		0.05		0.0455	91
7439-95-4	MAGNESIUM	250	250	270	261	104
7439-96-5	MANGANESE		0.5		0.487	97
7439-98-7	MOLYBDENUM		1		0.96	96
7440-02-0	NICKEL		1		0.955	95
7440-09-7	POTASSIUM					
7782-49-2	SELENIUM		0.05		0.05200	104
7440-22-4	SILVER		0.2		0.198	99
7440-23-5	SODIUM					
7440-28-0	THALLIUM		0.1		0.08020	80
7440-31-5	TIN		1		1.02	102
7440-62-2	VANADIUM		0.5		0.48100	96
7440-66-6	ZINC		1		0.926	93

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

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LIMS Version: 6.632

ICP Metals

Method SW6010

ICP Interference Check Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Run ID: IT130311-2A1

Date Analyzed: 03/11/2013

Result Units: MG/L

CASNO	Target Analyte	Spike Added		Results		% Rec.
		ICSA2	ICSAB2	ICSA2	ICSAB2	
7429-90-5	ALUMINUM	250	250	266	264	106
7440-36-0	ANTIMONY		0.6		0.579	96
7440-38-2	ARSENIC		0.1		0.109	109
7440-39-3	BARIUM		0.5		0.50400	101
7440-41-7	BERYLLIUM		0.5		0.502	100
7440-43-9	CADMIUM		1		0.98900	99
7440-70-2	CALCIUM	250	250	261	260	104
7440-47-3	CHROMIUM		0.5		0.48600	97
7440-48-4	COBALT		0.5		0.48300	97
7440-50-8	COPPER		0.5		0.53600	107
7439-89-6	IRON	100	100	106	105	105
7439-92-1	LEAD		0.05		0.0442	88
7439-95-4	MAGNESIUM	250	250	266	266	106
7439-96-5	MANGANESE		0.5		0.49300	99
7439-98-7	MOLYBDENUM		1		0.96600	97
7440-02-0	NICKEL		1		0.942	94
7440-09-7	POTASSIUM					
7782-49-2	SELENIUM		0.05		0.05000	100
7440-22-4	SILVER		0.2		0.19900	99
7440-23-5	SODIUM					
7440-28-0	THALLIUM		0.1		0.102	102
7440-31-5	TIN		1		1.03	103
7440-62-2	VANADIUM		0.5		0.484	97
7440-66-6	ZINC		1		0.979	98

Data Package ID: *it1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

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LIMS Version: 6.632

Metals Linear Ranges

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Instrument ID: ICPTTrace2

Active Date: 03/02/2010

Expiration Date: 05/31/2015

CASNO	Target Analyte	Concentration (ppm)
7429-90-5	ALUMINUM	500
7440-36-0	ANTIMONY	2
7440-38-2	ARSENIC	5
7440-39-3	BARIUM	10
7440-41-7	BERYLLIUM	1
7440-43-9	CADMIUM	5
7440-70-2	CALCIUM	500
7440-47-3	CHROMIUM	10
7440-48-4	COBALT	5
7440-50-8	COPPER	10
7439-89-6	IRON	200
7439-92-1	LEAD	10
7439-95-4	MAGNESIUM	500
7439-96-5	MANGANESE	10
7439-98-7	MOLYBDENUM	10
7440-02-0	NICKEL	10
7440-09-7	POTASSIUM	250
7782-49-2	SELENIUM	5
7440-22-4	SILVER	2
7440-23-5	SODIUM	150
7440-28-0	THALLIUM	5
7440-31-5	TIN	10
7440-61-1	URANIUM	50
7440-62-2	VANADIUM	5
7440-66-6	ZINC	10

ICP Interelement Correction Factors

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Instrument ID: ICPTrace2

Active Date: 11/9/2012

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Expiration Date: 11/9/2013

Analyte	Lamda (nm)	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Ni	Th
ALUMINUM																	
ANTIMONY									0.015350								
ARSENIC																	
BERYLLIUM																	
CADMIUM				0.006851													
CHROMIUM																	
COBALT					-0.00140												
COPPER																	
LEAD		-7.6E-05										3.04E-05					
MANGANESE																	
SELENIUM												-0.00025					
SILVER																	
THALLIUM												-0.00052			0.000225		
TIN																	
URANIUM												0.000181					
VANADIUM									0.0012			-0.00016					
ZINC																	

ICP Interelement Correction Factors

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Instrument ID: ICPTrace2

Active Date: 11/9/2012

Expiration Date: 11/9/2013

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Analyte	Lamda (nm)	K	Se	Ag	Na	Tl	V	Zn	Sn	Ti	Mo	Li	Sr	B	Si	U	Zr
ALUMINUM							0.012552				0.003324					-0.02791	
ANTIMONY											-0.00561						
ARSENIC																	
BERYLLIUM							0.000551									-0.00025	
CADMIUM																	
CHROMIUM																0.000673	
COBALT										0.002105							
COPPER																0.001073	
LEAD							0.001051			-0.00053	-0.00029					0.000717	
MANGANESE																	
SELENIUM																-0.00095	
SILVER																0.000698	0.003897
THALLIUM						0.003416	0.002636			0.001416						-0.00058	
TIN										0.001163							
URANIUM																	
VANADIUM																	
ZINC																	

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		MIXAHIGH	1	3/11/2013	12:30
		MIXBHIGH	1	3/11/2013	12:31
		MIXCHIGH	1	3/11/2013	12:33
		ICV	1	3/11/2013	12:35
		ICB	1	3/11/2013	12:37
		CRI1	1	3/11/2013	12:39
		ICSA1	1	3/11/2013	12:41
		ICSAB1	1	3/11/2013	12:43
		CCV1	1	3/11/2013	12:44
		CCB1	1	3/11/2013	12:51
		F130301-1MB	1	3/11/2013	12:53
		IP130307-2MB	1	3/11/2013	12:55
		IP130307-2LCS	1	3/11/2013	12:56
		IP130307-3MB	1	3/11/2013	12:58
		IP130307-3LCS	1	3/11/2013	13:00
		IP130307-4MB	1	3/11/2013	13:02
		IP130307-4LCS	1	3/11/2013	13:03
- Fe,Pb,Se,Ti,U,V		1303058-1	1	3/11/2013	13:05
- Fe,Pb,Se,Ti,U,V		1303058-1DUP	1	3/11/2013	13:07
- Fe,Pb,Se,Ti,U,V		1303058-1SER	5	3/11/2013	13:08
		CCV2	1	3/11/2013	13:10
		CCB2	1	3/11/2013	13:12
- Fe,Pb,Se,Ti,U,V		1303058-1MS	1	3/11/2013	13:14
- Fe,Pb,Se,Ti,U,V		1303058-1MSD	1	3/11/2013	13:16
- Ti		1303058-2	1	3/11/2013	13:17
- Ti		1303058-3	1	3/11/2013	13:19
- Fe,Pb,Se,Ti,U,V		1303058-4	1	3/11/2013	13:21
- Ti		1303058-5	1	3/11/2013	13:23
- Ti		1303058-6	1	3/11/2013	13:24
- Ti		1303058-7	1	3/11/2013	13:26
- Ti		1303058-8	1	3/11/2013	13:28
- Ti		1303058-9	1	3/11/2013	13:30
		CCV3	1	3/11/2013	13:32
		CCB3	1	3/11/2013	13:34
- Ti		1303058-10	1	3/11/2013	13:36

Data Package ID: IT1303059-1

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
- TI		1303058-11	1	3/11/2013	13:37
- TI		1303058-12	1	3/11/2013	13:39
- TI		1303058-13	1	3/11/2013	13:41
- TI		1303058-14	1	3/11/2013	13:43
	MQZ-35-130303	1303059-1	1	3/11/2013	13:44
	MQZ-35-130303	1303059-1DUP	1	3/11/2013	13:46
	MQZ-35-130303	1303059-1SER	5	3/11/2013	13:48
	MQZ-35-130303	1303059-1MS	1	3/11/2013	13:50
	MQZ-35-130303	1303059-1MSD	1	3/11/2013	13:51
		CCV4	1	3/11/2013	13:54
		CCB4	1	3/11/2013	15:21
		CCV5	1	3/11/2013	15:23
		CCB5	1	3/11/2013	15:25
	MQZ-49-130303	1303059-2	1	3/11/2013	15:27
		ZZZ	1	3/11/2013	15:28
		ZZZ	1	3/11/2013	15:33
		CCV6	1	3/11/2013	15:35
		CCB6	1	3/11/2013	15:37
	MQZ-51-130303	1303059-3	1	3/11/2013	15:39
	MQZ-51-2-130303	1303059-4	1	3/11/2013	15:40
- TI	MQZ-52-130303	1303059-5	1	3/11/2013	15:42
	MQZ-61-130303	1303059-6	1	3/11/2013	15:44
- TI	MQZ-62-130303	1303059-7	1	3/11/2013	15:46
	MQZ-63-130303	1303059-8	1	3/11/2013	15:48
- TI	MQZ-64-130303	1303059-9	1	3/11/2013	15:49
	MQZ-65-130303	1303059-10	1	3/11/2013	15:51
- TI	MQZ-66-130303	1303059-11	1	3/11/2013	15:53
		CCV7	1	3/11/2013	15:55
		CCB7	1	3/11/2013	15:57
- TI	MQZ-BKGD-E-130303	1303059-12	1	3/11/2013	15:59
- TI	MQZ-BKGD-N-130303	1303059-13	1	3/11/2013	16:01
- TI	MQZ-BKGD-S-130303	1303059-14	1	3/11/2013	16:02
	MQZ-BKGD-W-130303	1303059-15	1	3/11/2013	16:04
		1303060-1	1	3/11/2013	16:06
		1303060-1DUP	1	3/11/2013	16:08

Data Package ID: IT1303059-1

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		1303060-1SER	5	3/11/2013	16:09
		1303060-1MS	1	3/11/2013	16:11
		1303060-1MSD	1	3/11/2013	16:13
		1303060-2	1	3/11/2013	16:15
		CCV8	1	3/11/2013	16:17
		CCB8	1	3/11/2013	16:19
		1303060-3	1	3/11/2013	16:20
		1303060-4	1	3/11/2013	16:22
		1303060-5	1	3/11/2013	16:24
		1303060-6	1	3/11/2013	16:26
		1303060-7	1	3/11/2013	16:28
		1303060-8	1	3/11/2013	16:29
		1303060-9	1	3/11/2013	16:31
		1303060-10	1	3/11/2013	16:33
		1303060-11	1	3/11/2013	16:35
		1303060-12	1	3/11/2013	16:36
		CCV9	1	3/11/2013	16:39
		CCB9	1	3/11/2013	16:40
		ZZZ	1	3/11/2013	16:42
		ZZZ	1	3/11/2013	16:45
		ZZZ	1	3/11/2013	16:49
+ Ca,Tl		1303057-1	5	3/11/2013	17:08
+ Ca,Tl		1303057-1DUP	5	3/11/2013	17:10
+ Ca,Tl		1303057-1SER	25	3/11/2013	17:11
+ Ca,Tl		1303057-1MS	5	3/11/2013	17:13
+ Ca,Tl		1303057-1MSD	5	3/11/2013	17:15
		ZZZ	1	3/11/2013	17:17
		CCV10	1	3/11/2013	17:21
		CCB10	1	3/11/2013	17:23
+ Fe,Pb,Se,Tl,U,V		1303058-1	5	3/11/2013	17:24
+ Fe,Pb,Se,Tl,U,V		1303058-1DUP	5	3/11/2013	17:26
+ Fe,Pb,Se,Tl,U,V		1303058-1SER	25	3/11/2013	17:28
+ Fe,Pb,Se,Tl,U,V		1303058-1MS	5	3/11/2013	17:29
+ Fe,Pb,Se,Tl,U,V		1303058-1MSD	5	3/11/2013	17:31
		CCV11	1	3/11/2013	17:33

Data Package ID: IT1303059-1

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		CCB11	1	3/11/2013	17:36
+ Sb		1303058-1A	1	3/11/2013	17:38
+ Fe,Pb,Se,Tl,V		1303058-1A	5	3/11/2013	17:39
+ Ca,Mn,Sb,V	MQZ-35-130303	1303059-1A	1	3/11/2013	17:41
+ Sb,Zr		1303060-1A	1	3/11/2013	17:43
+ Tl		1303058-2	5	3/11/2013	17:45
+ Tl		1303058-3	5	3/11/2013	17:46
+ Fe,Pb,Se,Tl,U,V		1303058-4	5	3/11/2013	17:48
+ Tl		1303058-5	5	3/11/2013	17:50
+ Tl		1303058-6	5	3/11/2013	17:52
+ Tl		1303058-7	5	3/11/2013	17:53
		CCV12	1	3/11/2013	17:55
		CCB12	1	3/11/2013	17:57
+ Tl		1303058-8	5	3/11/2013	17:59
+ Tl		1303058-9	5	3/11/2013	18:01
+ Tl		1303058-10	5	3/11/2013	18:02
+ Tl		1303058-11	5	3/11/2013	18:04
+ Tl		1303058-12	5	3/11/2013	18:06
+ Tl		1303058-13	5	3/11/2013	18:08
+ Tl		1303058-14	5	3/11/2013	18:09
+ Tl	MQZ-52-130303	1303059-5	5	3/11/2013	18:11
+ Tl	MQZ-62-130303	1303059-7	5	3/11/2013	18:13
+ Tl	MQZ-64-130303	1303059-9	5	3/11/2013	18:15
		CCV13	1	3/11/2013	18:17
		CCB13	1	3/11/2013	18:18
+ Tl	MQZ-66-130303	1303059-11	5	3/11/2013	18:20
+ Tl	MQZ-BKGD-E-130303	1303059-12	5	3/11/2013	18:22
+ Tl	MQZ-BKGD-N-130303	1303059-13	5	3/11/2013	18:24
+ Tl	MQZ-BKGD-S-130303	1303059-14	5	3/11/2013	18:26
+ Tl		1303060-9	5	3/11/2013	18:27
+ Tl		1303060-10	5	3/11/2013	18:29
+ Tl		1303060-1	5	3/11/2013	18:31
+ Tl		1303060-1DUP	5	3/11/2013	18:33
+ Tl		1303060-1SER	25	3/11/2013	18:34
+ Tl		1303060-1MS	5	3/11/2013	18:36

Data Package ID: IT1303059-1

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		CCV14	1	3/11/2013	18:38
		CCB14	1	3/11/2013	18:52
+ TI		1303060-1MSD	5	3/11/2013	18:56
+ TI		1303060-2	5	3/11/2013	18:57
+ TI		1303060-3	5	3/11/2013	18:59
+ TI		1303060-4	5	3/11/2013	19:01
+ TI		1303060-5	5	3/11/2013	19:03
+ TI		1303060-6	5	3/11/2013	19:05
+ TI		1303060-7	5	3/11/2013	19:06
+ TI		1303060-8	5	3/11/2013	19:08
+ TI		1303060-11	5	3/11/2013	19:10
+ TI		1303060-12	5	3/11/2013	19:12
		CCV15	1	3/11/2013	19:14
		CCB15	1	3/11/2013	19:15
+ TI		1303057-2	5	3/11/2013	19:17
+ TI		1303057-3	5	3/11/2013	19:19
+ TI		1303057-4	5	3/11/2013	19:21
+ TI		1303057-5	5	3/11/2013	19:23
+ TI		1303057-6	5	3/11/2013	19:24
+ TI		1303057-7	5	3/11/2013	19:26
+ TI		1303057-8	5	3/11/2013	19:28
+ TI		1303057-10	5	3/11/2013	19:30
+ TI		1303057-11	5	3/11/2013	19:32
+ TI		1303057-12	5	3/11/2013	19:33
		CCV16	1	3/11/2013	19:35
		CCB16	1	3/11/2013	19:37
+ TI		1303057-13	5	3/11/2013	19:39
+ TI		1303057-14	5	3/11/2013	19:41
+ TI		1303057-15	5	3/11/2013	19:42
		CRI2	1	3/11/2013	19:44
		ICSA2	1	3/11/2013	19:46
		ICSAB2	1	3/11/2013	19:48
		CCV17	1	3/11/2013	19:50
		CCB17	1	3/11/2013	19:52

Data Package ID: IT1303059-1

ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: IP130307-3MB

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 07-Mar-13

Date Analyzed: 08-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-2

Run ID: IM130308-10A1

Cleanup: NONE

Basis: N/A

File Name: 002SMPL_

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: UG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-61-1	URANIUM	10	10	10	U	

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

LIMS Version: 6.632

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ICPMS Metals

Method SW6020A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: IM130307-3LCS

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/07/2013

Date Analyzed: 03/08/2013

Prep Method: SW3050B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-2

Run ID: IM130308-10A1

Cleanup: NONE

Basis: N/A

File Name: 005SMPL_

Sample Aliquot: 1 g

Final Volume: 100 ml

Result Units: UG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-61-1	URANIUM	1000	972	10		97	80 - 120%

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

LIMS Version: 6.632

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ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-35-130303

LabID: 1303059-1MS

Sample Matrix: SOIL

% Moisture: 2.3

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 08-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-2

Run ID: IM130308-10A1

Cleanup: NONE

Basis: Dry Weight

Sample Aliquot: 1.023 g

Final Volume: 100 ml

Result Units: UG/KG

File Name: 033SMPL_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-61-1	URANIUM	130000		134000		100	1000	588	75 - 125%

Field ID: MQZ-35-130303

LabID: 1303059-1MSD

Sample Matrix: SOIL

% Moisture: 2.3

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 08-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-2

Run ID: IM130308-10A1

Cleanup: NONE

Basis: Dry Weight

Sample Aliquot: 1.048 g

Final Volume: 100 ml

Result Units: UG/KG

File Name: 034SMPL_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-61-1	URANIUM	121000		977	-760	97.7	20	10

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICPMS Metals

Method SW6020

Duplicate Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID:	MQZ-35-130303
Lab ID:	1303059-1D

Sample Matrix: SOIL

% Moisture: 2.3

Date Collected: 03/03/2013

Date Extracted: 03/07/2013

Date Analyzed: 03/08/2013

Prep Batch: IP130307-3

QCBatchID: IP130307-3-2

Run ID: IM130308-10A1

Cleanup: NONE

Basis: Dry Weight

File Name: 031SMPL_

Sample Aliquot: 1.004 g

Final Volume: 100 ml

Result Units: UG/KG

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
7440-61-1	URANIUM	130000		130000		102	100	1	20

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICPMS Metals

Method SW6020

Serial Dilution

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Field ID: MQZ-35-130303

Lab ID: 1303059-1L

Run ID: IM130308-10A1

Date Analyzed: 08-Mar-13

Result Units: ug/l

CASNO	Target Analyte	Sample Result	Samp Qual	SD Result	SD Qual	EPA Qualifier	%D
7440-61-1	URANIUM	12.9		12.6			2

Data Package ID: *im1303059-1*

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Prep Batch ID: IP130307-3

Start Date: 03/07/13

End Date: 03/07/13

Concentration Method: NONE

Batch Created By: bas

Start Time: 14:00

End Time: 18:00

Extract Method: SW3050B

Date Created: 03/07/13

Prep Analyst: Brent A. Stanfield

Initial Volume Units: g

Time Created: 13:22

Comments:

Final Volume Units: ml

Validated By: bas

Date Validated: 03/07/13

Time Validated: 13:50

QC Batch ID: IP130307-3-2

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
IP130307-3	MB	XXXXXX	SOIL	XXXXXX	1	100	NONE	1	1303059
IM130307-3	LCS	XXXXXX	SOIL	XXXXXX	1	100	NONE	1	1303059
1303059-1	MS	MQZ-35-130303	SOIL	3/3/2013	1.023	100	NONE	1	1303059
1303059-1	MSD	MQZ-35-130303	SOIL	3/3/2013	1.048	100	NONE	1	1303059
1303059-1	DUP	MQZ-35-130303	SOIL	3/3/2013	1.004	100	NONE	1	1303059
1303059-1	SMP	MQZ-35-130303	SOIL	3/3/2013	1.029	100	NONE	1	1303059
1303059-10	SMP	MQZ-65-130303	SOIL	3/3/2013	1.026	100	NONE	1	1303059
1303059-11	SMP	MQZ-66-130303	SOIL	3/3/2013	1.015	100	NONE	1	1303059
1303059-12	SMP	MQZ-BKGD-E-130303	SOIL	3/3/2013	1.017	100	NONE	1	1303059
1303059-13	SMP	MQZ-BKGD-N-130303	SOIL	3/3/2013	1.017	100	NONE	1	1303059
1303059-14	SMP	MQZ-BKGD-S-130303	SOIL	3/3/2013	1.004	100	NONE	1	1303059
1303059-15	SMP	MQZ-BKGD-W-130303	SOIL	3/3/2013	1.015	100	NONE	1	1303059
1303059-2	SMP	MQZ-49-130303	SOIL	3/3/2013	1.001	100	NONE	1	1303059
1303059-3	SMP	MQZ-51-130303	SOIL	3/3/2013	1.005	100	NONE	1	1303059
1303059-4	SMP	MQZ-51-2-130303	SOIL	3/3/2013	1.012	100	NONE	1	1303059
1303059-5	SMP	MQZ-52-130303	SOIL	3/3/2013	1.011	100	NONE	1	1303059
1303059-6	SMP	MQZ-61-130303	SOIL	3/3/2013	1.015	100	NONE	1	1303059
1303059-7	SMP	MQZ-62-130303	SOIL	3/3/2013	1.007	100	NONE	1	1303059
1303059-8	SMP	MQZ-63-130303	SOIL	3/3/2013	1.005	100	NONE	1	1303059
1303059-9	SMP	MQZ-64-130303	SOIL	3/3/2013	1.017	100	NONE	1	1303059

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicate
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standard	SMP	Field Sample
SYS	Sample Yield Spike		

URANIUM

Method SW6020

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Run ID: IM130308-10A1

Result Units: MG/L

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
ICV	Initial Calibration	3/8/2013	13:02	0.002	0.00200	0.00001	N/A	100	90 - 110
CCV1	Continuing Calibration	3/8/2013	14:03	0.001	0.000975	0.00001	N/A	97	90 - 110
CCV2	Continuing Calibration	3/8/2013	14:47	0.001	0.000967	0.00001	N/A	97	90 - 110
CCV3	Continuing Calibration	3/8/2013	15:41	0.001	0.000978	0.00001	N/A	98	90 - 110
CCV4	Continuing Calibration	3/8/2013	16:34	0.001	0.000988	0.00001	N/A	99	90 - 110
CCV5	Continuing Calibration	3/8/2013	17:02	0.001	0.000986	0.00001	N/A	99	90 - 110
CCV6	Continuing Calibration	3/8/2013	17:31	0.001	0.000982	0.00001	N/A	98	90 - 110
CCV7	Continuing Calibration	3/8/2013	17:59	0.001	0.000985	0.00001	N/A	99	90 - 110
CCV8	Continuing Calibration	3/8/2013	18:27	0.001	0.000984	0.00001	N/A	98	90 - 110

Data Package ID: *im1303059-1*

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URANIUM
Method SW6020
Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Run ID: IM130308-10A1

Result Units: MG/L

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Result	Reporting Limit	Flag
ICB	Initial Calibration	3/8/2013	13:18	0.00001	0.00001	U
CCB1	Continuing Calibration	3/8/2013	14:16	0.00001	0.00001	U
CCB2	Continuing Calibration	3/8/2013	14:58	0.00001	0.00001	U
CCB3	Continuing Calibration	3/8/2013	15:53	0.00001	0.00001	U
CCB4	Continuing Calibration	3/8/2013	16:36	0.00001	0.00001	U
CCB5	Continuing Calibration	3/8/2013	17:04	0.00001	0.00001	U
CCB6	Continuing Calibration	3/8/2013	17:33	0.00001	0.00001	U
CCB7	Continuing Calibration	3/8/2013	18:01	0.00001	0.00001	U
CCB8	Continuing Calibration	3/8/2013	18:29	0.00001	0.00001	U

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

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ICPMS Metals

Method SW6020

ICP Interference Check Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Run ID: IM130308-10A1

Date Analyzed: 03/08/2013

Result Units: MG/L

CASNO	Target Analyte	Spike Added		Results		% Rec.
		ICSA1	ICSAB1	ICSA1	ICSAB1	
7440-61-1	URANIUM		0.001		0.00104	104

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

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Metals Linear Ranges

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Instrument ID: ICPMS2

Active Date: 04/01/2010

Expiration Date: 04/01/2015

CASNO	Target Analyte	Concentration (ppm)
7429-90-5	ALUMINUM	50
7440-36-0	ANTIMONY	0.3
7440-38-2	ARSENIC	1
7440-39-3	BARIUM	1
7440-41-7	BERYLLIUM	0.5
7440-43-9	CADMIUM	0.3
7440-70-2	CALCIUM	500
7440-47-3	CHROMIUM	5
7440-48-4	COBALT	1
7440-50-8	COPPER	10
7439-89-6	IRON	50
7439-92-1	LEAD	0.5
7439-95-4	MAGNESIUM	100
7439-96-5	MANGANESE	2
7439-98-7	MOLYBDENUM	1
7440-02-0	NICKEL	5
7440-09-7	POTASSIUM	500
7782-49-2	SELENIUM	1
7440-22-4	SILVER	0.1
7440-23-5	SODIUM	1000
7440-28-0	THALLIUM	0.02
7440-31-5	TIN	5
7440-61-1	URANIUM	0.1
7440-62-2	VANADIUM	1
7440-66-6	ZINC	20

ICPMS2 Run Log -- 3/8/2013

Instrument ID: ICPMS2

File Name: 003CALB.

AnalRunID: IM130308-10A1

CalibRefID: IM130308-10A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		blank	1	3/8/2013	12:35
		H/1000	1	3/8/2013	12:38
		H/100	1	3/8/2013	12:41
		H/10	1	3/8/2013	12:44
		HIGH	1	3/8/2013	12:47
		ZZZZZZ	1	3/8/2013	12:54
		ICV	1	3/8/2013	13:02
		ICB	1	3/8/2013	13:18
		CRI1	1	3/8/2013	13:21
		ICSA1	1	3/8/2013	13:24
		ICSAB1	1	3/8/2013	13:27
		ZZZZZZ	1	3/8/2013	13:39
		IP130307-1MB	10	3/8/2013	13:42
		1302343-1	10	3/8/2013	13:45
		1302347-1	10	3/8/2013	13:48
		1303056-2	10	3/8/2013	13:51
		1303056-2DUP	10	3/8/2013	13:54
		1303056-2SER	50	3/8/2013	14:00
		CCV1	1	3/8/2013	14:03
		CCB1	1	3/8/2013	14:16
		F130301-1MB	10	3/8/2013	14:19
		1303056-2MS	10	3/8/2013	14:22
		1303056-2MSD	10	3/8/2013	14:25
		FM130301-1LCS	10	3/8/2013	14:29
		IP130307-1LCS	10	3/8/2013	14:32
		1303045-1	10	3/8/2013	14:41
		1303044-1	10	3/8/2013	14:44
		CCV2	1	3/8/2013	14:47
		CCB2	1	3/8/2013	14:58
		1303028-3	10	3/8/2013	15:01
		1303028-3SER	50	3/8/2013	15:04
		1303028-3MS	10	3/8/2013	15:07
		1303028-1	10	3/8/2013	15:11
		1303028-2	10	3/8/2013	15:14
		1303046-1	10	3/8/2013	15:17

Data Package ID: IM1303059-1

ICPMS2 Run Log -- 3/8/2013

Instrument ID: ICPMS2

File Name: 008SMPL_

AnalRunID: IM130308-10A1

CalibRefID: IM130308-10A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		1303029-1	10	3/8/2013	15:20
		1303029-2	10	3/8/2013	15:23
		1303030-1	10	3/8/2013	15:26
		1303028-3MSD	10	3/8/2013	15:38
		CCV3	1	3/8/2013	15:41
		CCB3	1	3/8/2013	15:53
		IP130307-2MB	10	3/8/2013	16:10
		IP130307-3MB	10	3/8/2013	16:12
		IP130307-4MB	10	3/8/2013	16:14
		IM130307-2LCS	10	3/8/2013	16:16
		IM130307-3LCS	10	3/8/2013	16:18
		IM130307-4LCS	10	3/8/2013	16:20
		1303058-1	100	3/8/2013	16:22
		1303058-1DUP	100	3/8/2013	16:24
		1303058-1SER	500	3/8/2013	16:26
		1303058-1MS	100	3/8/2013	16:28
		CCV4	1	3/8/2013	16:34
		CCB4	1	3/8/2013	16:36
		1303058-1MSD	100	3/8/2013	16:38
		1303058-1A	100	3/8/2013	16:40
		1303058-2	100	3/8/2013	16:42
		1303058-3	100	3/8/2013	16:44
		1303058-4	100	3/8/2013	16:46
		1303058-5	100	3/8/2013	16:48
		1303058-6	100	3/8/2013	16:50
		1303058-7	100	3/8/2013	16:52
		1303058-8	100	3/8/2013	16:54
		1303058-9	100	3/8/2013	16:56
		CCV5	1	3/8/2013	17:02
		CCB5	1	3/8/2013	17:04
		1303058-10	100	3/8/2013	17:06
		1303058-11	100	3/8/2013	17:08
		1303058-12	100	3/8/2013	17:10
		1303058-13	100	3/8/2013	17:12
		1303058-14	100	3/8/2013	17:14

Data Package ID: IM1303059-1

ICPMS2 Run Log -- 3/8/2013

Instrument ID: ICPMS2

File Name: 030SMPL_

AnalRunID: IM130308-10A1

CalibRefID: IM130308-10A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
	MQZ-35-130303	1303059-1	100	3/8/2013	17:16
	MQZ-35-130303	1303059-1DUP	100	3/8/2013	17:18
	MQZ-35-130303	1303059-1SER	500	3/8/2013	17:20
	MQZ-35-130303	1303059-1MS	100	3/8/2013	17:22
	MQZ-35-130303	1303059-1MSD	100	3/8/2013	17:24
		CCV6	1	3/8/2013	17:31
		CCB6	1	3/8/2013	17:33
	MQZ-35-130303	1303059-1A	100	3/8/2013	17:35
	MQZ-49-130303	1303059-2	100	3/8/2013	17:37
	MQZ-51-130303	1303059-3	100	3/8/2013	17:39
	MQZ-51-2-130303	1303059-4	100	3/8/2013	17:41
	MQZ-52-130303	1303059-5	100	3/8/2013	17:43
	MQZ-61-130303	1303059-6	100	3/8/2013	17:45
	MQZ-62-130303	1303059-7	100	3/8/2013	17:47
	MQZ-63-130303	1303059-8	100	3/8/2013	17:49
	MQZ-64-130303	1303059-9	100	3/8/2013	17:51
	MQZ-65-130303	1303059-10	100	3/8/2013	17:53
		CCV7	1	3/8/2013	17:59
		CCB7	1	3/8/2013	18:01
	MQZ-66-130303	1303059-11	100	3/8/2013	18:03
	MQZ-BKGD-E-130303	1303059-12	100	3/8/2013	18:05
	MQZ-BKGD-N-130303	1303059-13	100	3/8/2013	18:07
	MQZ-BKGD-S-130303	1303059-14	100	3/8/2013	18:09
	MQZ-BKGD-W-130303	1303059-15	100	3/8/2013	18:11
		1303060-1	100	3/8/2013	18:13
		1303060-1DUP	100	3/8/2013	18:15
		1303060-1SER	50	3/8/2013	18:17
		1303060-1MS	100	3/8/2013	18:19
		1303060-1MSD	100	3/8/2013	18:21
		CCV8	1	3/8/2013	18:27
		CCB8	1	3/8/2013	18:29
		1303060-1A	100	3/8/2013	18:31
		1303060-2	100	3/8/2013	18:33
		1303060-3	100	3/8/2013	18:35
		1303060-4	100	3/8/2013	18:37

Data Package ID: IM1303059-1

ICPMS2 Run Log -- 3/8/2013

Instrument ID: ICPMS2

File Name: 065SMPL_

AnalRunID: IM130308-10A1

CalibRefID: IM130308-10A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		1303060-5	100	3/8/2013	18:39
		1303060-6	100	3/8/2013	18:41
		1303060-7	100	3/8/2013	18:43
		1303060-8	100	3/8/2013	18:45
		1303060-9	100	3/8/2013	18:47
		1303060-10	100	3/8/2013	18:49
		CCV9	1	3/8/2013	18:55
		CCB9	1	3/8/2013	18:57
		1303060-11	100	3/8/2013	18:59
		1303060-12	100	3/8/2013	19:01
		CCV10	1	3/8/2013	19:08
		CCB10	1	3/8/2013	19:10

Data Package ID: IM1303059-1

Mercury

Method SW7471A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: HG130308-2MB

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: METHOD

Prep Batch: HG130308-2

QCBatchID: HG130308-2-1

Run ID: HG130311-3A1

Cleanup: NONE

Basis: N/A

File Name: HG130308-2

Sample Aliquot: 0.6 g

Final Volume: 100 g

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7439-97-6	MERCURY	1	0.033	0.033	U	

Data Package ID: hg1303059-1

Mercury

Method SW7471A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Lab ID: HG130308-2LCS

Sample Matrix: SOIL

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/08/2013

Date Analyzed: 03/11/2013

Prep Method: METHOD

Prep Batch: HG130308-2

QCBatchID: HG130308-2-1

Run ID: HG130311-3A1

Cleanup: NONE

Basis: N/A

File Name: HG130308-2

Sample Aliquot: 0.6 g

Final Volume: 100 g

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7439-97-6	MERCURY	0.167	0.182	0.0333		109	80 - 120%

Data Package ID: hg1303059-1

Date Printed: Tuesday, March 12, 2013

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Prep Batch ID: HG130308-2

Start Date: 03/08/13

End Date: 03/08/13

Concentration Method: NONE

Batch Created By: skl

Start Time: 7:57

End Time: 12:00

Extract Method: METHOD

Date Created: 03/08/13

Prep Analyst: Sheri Lafferty

Initial Volume Units: g

Time Created: 8:02

Comments:

Final Volume Units: g

Validated By: skl

Date Validated: 03/08/13

Time Validated: 13:30

QC Batch ID: HG130308-2-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
HG130308-2	MB	XXXXXX	SOIL	XXXXXX	0.6	100	NONE	1	1303098
HG130308-2	LCS	XXXXXX	SOIL	XXXXXX	0.6	100	NONE	1	1303098
1303098-5	MS	XXXXXX	SOIL	XXXXXX	0.61	100	NONE	1	1303098
1303098-5	MSD	XXXXXX	SOIL	XXXXXX	0.611	100	NONE	1	1303098
1303098-5	DUP	XXXXXX	SOIL	XXXXXX	0.612	100	NONE	1	1303098
1303059-1	SMP	MQZ-35-130303	SOIL	3/3/2013	0.609	100	NONE	1	1303059
1303059-10	SMP	MQZ-65-130303	SOIL	3/3/2013	0.611	100	NONE	1	1303059
1303059-11	SMP	MQZ-66-130303	SOIL	3/3/2013	0.617	100	NONE	1	1303059
1303059-12	SMP	MQZ-BKGD-E-130303	SOIL	3/3/2013	0.609	100	NONE	1	1303059
1303059-13	SMP	MQZ-BKGD-N-130303	SOIL	3/3/2013	0.6	100	NONE	1	1303059
1303059-14	SMP	MQZ-BKGD-S-130303	SOIL	3/3/2013	0.608	100	NONE	1	1303059
1303059-15	SMP	MQZ-BKGD-W-130303	SOIL	3/3/2013	0.601	100	NONE	1	1303059
1303059-2	SMP	MQZ-49-130303	SOIL	3/3/2013	0.609	100	NONE	1	1303059
1303059-3	SMP	MQZ-51-130303	SOIL	3/3/2013	0.905	100	NONE	1	1303059
1303059-4	SMP	MQZ-51-2-130303	SOIL	3/3/2013	0.613	100	NONE	1	1303059
1303059-5	SMP	MQZ-52-130303	SOIL	3/3/2013	0.603	100	NONE	1	1303059
1303059-6	SMP	MQZ-61-130303	SOIL	3/3/2013	0.601	100	NONE	1	1303059
1303059-7	SMP	MQZ-62-130303	SOIL	3/3/2013	0.607	100	NONE	1	1303059
1303059-8	SMP	MQZ-63-130303	SOIL	3/3/2013	0.616	100	NONE	1	1303059
1303059-9	SMP	MQZ-64-130303	SOIL	3/3/2013	0.61	100	NONE	1	1303059
1303098-5	SMP	XXXXXX	SOIL	XXXXXX	0.606	100	NONE	1	1303098

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicate
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standard	SMP	Field Sample
SYS	Sample Yield Spike		

MERCURY

Method SW7471

Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Run ID: HG130311-3A1

Result Units: MG/L

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
ICV	Initial Calibration	3/11/2013	11:58	0.001	0.000998	0.0002	N/A	100	90 - 110
CCV1	Continuing Calibration	3/11/2013	12:32	0.002	0.00215	0.0002	N/A	107	80 - 120
CCV2	Continuing Calibration	3/11/2013	12:57	0.002	0.00216	0.0002	N/A	108	80 - 120
CCV3	Continuing Calibration	3/11/2013	13:18	0.002	0.00216	0.0002	N/A	108	80 - 120

Data Package ID: *hg1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

LIMS Version: 6.632

Page 1 of 1

MERCURY
Method SW7471
Calibration Blanks

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Run ID: HG130311-3A1

Result Units: MG/L

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Result	Reporting Limit	Flag
ICB	Initial Calibration	3/11/2013	12:00	0.0002	0.0002	U
CCB1	Continuing Calibration	3/11/2013	12:34	0.0002	0.0002	U
CCB2	Continuing Calibration	3/11/2013	12:59	0.0002	0.0002	U
CCB3	Continuing Calibration	3/11/2013	13:21	0.0002	0.0002	U

Data Package ID: *hg1303059-1*

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

LIMS Version: 6.632

Page 1 of 1

Metals Linear Ranges

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

Instrument ID: CETAC750

Active Date: 07/19/2010

Expiration Date: 10/17/2020

CASNO	Target Analyte	Concentration (ppm)
7439-97-6	MERCURY	0.01

Mercury Run Log -- 3/11/2013

Instrument ID: CETAC7500
 File Name: HG130308-2
 AnalRunID: HG130311-3A1
 CalibRefID: HG130311-3A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
		STD0	1	3/11/2013	11:43
		STD1	1	3/11/2013	11:45
		STD2	1	3/11/2013	11:47
		STD3	1	3/11/2013	11:49
		STD4	1	3/11/2013	11:51
		STD5	1	3/11/2013	11:53
		STD6	1	3/11/2013	11:55
		ICV	1	3/11/2013	11:58
		ICB	1	3/11/2013	12:00
		CRA1	1	3/11/2013	12:10
		HG130308-2MB	1	3/11/2013	12:12
		HG130308-2LCS	1	3/11/2013	12:14
		1303098-1	1	3/11/2013	12:16
		1303098-2	1	3/11/2013	12:19
		1303098-3	1	3/11/2013	12:21
		1303098-4	1	3/11/2013	12:23
		1303098-5	1	3/11/2013	12:25
		1303098-5DUP	1	3/11/2013	12:27
		1303098-5L	5	3/11/2013	12:29
		CCV1	1	3/11/2013	12:32
		CCB1	1	3/11/2013	12:34
		1303098-5MS	1	3/11/2013	12:36
		1303098-5MSD	1	3/11/2013	12:38
	MQZ-35-130303	1303059-1	1	3/11/2013	12:40
	MQZ-49-130303	1303059-2	1	3/11/2013	12:42
	MQZ-51-130303	1303059-3	1	3/11/2013	12:44
	MQZ-51-2-130303	1303059-4	1	3/11/2013	12:46
	MQZ-52-130303	1303059-5	1	3/11/2013	12:49
	MQZ-61-130303	1303059-6	1	3/11/2013	12:51
	MQZ-62-130303	1303059-7	1	3/11/2013	12:53
	MQZ-63-130303	1303059-8	1	3/11/2013	12:55
		CCV2	1	3/11/2013	12:57
		CCB2	1	3/11/2013	12:59
	MQZ-64-130303	1303059-9	1	3/11/2013	13:01
	MQZ-65-130303	1303059-10	1	3/11/2013	13:04

Data Package ID: HG1303059-1

Mercury Run Log -- 3/11/2013

Instrument ID: CETAC7500
File Name: HG130308-2
AnalRunID: HG130311-3A1
CalibRefID: HG130311-3A1

Comment	Field ID	Lab ID	DF	Date Analyzed	Time Analyzed
	MQZ-66-130303	1303059-11	1	3/11/2013	13:06
	MQZ-BKGD-E-130303	1303059-12	1	3/11/2013	13:08
	MQZ-BKGD-N-130303	1303059-13	1	3/11/2013	13:10
	MQZ-BKGD-S-130303	1303059-14	1	3/11/2013	13:12
	MQZ-BKGD-W-130303	1303059-15	1	3/11/2013	13:14
		CRA2	1	3/11/2013	13:16
		CCV3	1	3/11/2013	13:18
		CCB3	1	3/11/2013	13:21

Data Package ID: HG1303059-1



Raw Data

HEADER INFORMATION FOR ANALYTICAL SEQUENCE 130311A

Instrument: Trace2

Analyst: Mike Lundgreen

STANDARD SOLUTION CODES

Stock A (ST120423-6) Exp. 4-23-2013		
<u>Element</u>		<u>ug/ml</u>
Al, Ca, Mg		1000
K		500
Na		300
Fe		400
Li		20
<u>Standard</u>	<u>Dilution</u>	<u>Procedure</u>
A1	1/2 of Stock A	5ml of Stock A to 10ml final volume.
A2	1/2.5 of Stock A	2ml of Stock A1 to a 5ml final volume.
A3	1/5 of Stock A	1ml of Stock A1 to a 5ml final volume.
A4	1/10 of A1	1ml of Standard A1 up to a 10ml final volume.
A5	1/10 of A4	1ml of Standard A4 up to a 10ml final volume.

Stock B (ST110316-5) Exp. 2-28-15		
<u>Element</u>		<u>ug/ml</u>
P, Si		100
B, Ba, Cr, Cu, Mn, Mo, Ni, Pb, Sn, Sr, Ti, Zn		20
As, Cd, Co, Se, Tl, V		10
Sb		4
Be		2

Stock Ag- 1000 ug/ml (ST100407-4) Exp. 2-28-15
 Stock Th – 1000 ug/ml (ST100407-5) Exp. 2-28-15

The following dilutions of Stock Ag and Stock Th are made to provide the daily calibration Standards.

<u>Standard</u>	<u>Dilution</u>	<u>Procedure</u>
B1	1/2 of Stock B	5ml of Stock B, 0.02ml of Stock Ag and 0.02ml of Stock Th up to a 10ml final volume.
B2	1/500 Ag and 1/500 Th	1.0ml of Standard B1 up to a 10ml final volume.
B3	1/10 of B1	1.0ml of Standard B2 up to a 10ml final volume.

Stock C (ST120813-5) Exp. 6/30/15		
<u>Element</u>		<u>ug/ml</u>
S, U		100
Bi, Zr		10
<u>Standard</u>	<u>Dilution</u>	<u>Procedure</u>
C1	1/2 of Stock C	5ml of Stock C up to a 10ml final volume.
C2	1/10 of C1	1.0ml of Standard C1 up to a 10ml final volume.
C3	1/10 of C2	1.0ml of Standard C2 up to a 10ml final volume.

RL STD (Reporting Limit Standard) Intermediate.
 (ST100301-54) Exp. 2-28-15

<u>Element</u>	<u>ug/ml</u>
K, Na	500
Ca, Mg	200
Al, U	100
B, Fe, P, S, Si	50
Li, Mo, Sn, Sr, Ti	10
Sb	8
Ni, As, Bi, Se, Tl, Zn, Zr	5
Pb	3
Ag, Ba, Co, Cr, Cu, Mn, V, Th	2
Be, Cd	1

RL STD (working standard) made daily by diluting the intermediate above 1000 fold. This working standard has concentration levels at the normal ALS-FC reporting limits for all elements except Ca, Mg and Na, K which are at 0.2ppm and 0.5ppm; this is below the normal ALS-FC reporting limit.

RL2 (working standard) made daily by diluting the intermediate above 333 fold.

Blank Solution

Double D.I. water, 3% HNO₃ and 5% HCl
Used for Std. Blank, ICB and CCB

CCV (ST120621-3) Exp. 12-18-13

<u>Element</u>	<u>ug/ml</u>
Al, Ca, Mg, K, Na	50
Fe	20
U, P, S, Si	5
B, Ba, Cr, Cu, Mn, Mo, Ni, Pb, Se, Sn, Zn, Zr	1
As, Be, Bi, Cd, Co, Li, Sb, Sr, Ti, Tl, V	0.5
Ag, Th	0.2

ICV (ST120621-3) Exp. 12-18-13

Prepared daily by diluting the CCV (described above) 1/2.
The 1/2 dilution is made by diluting 5ml of the CCV to a 10ml final volume.
The resulting concentrations are:

<u>Element</u>	<u>ug/ml</u>
Al, Ca, Mg, K, Na	25
Fe	10
U, P, S, Si	2.5
B, Ba, Cr, Cu, Mn, Mo, Ni, Pb, Se, Sn, Zn, Zr	0.5
As, Be, Bi, Cd, Co, Li, Sb, Sr, Ti, Tl, V	0.25
Ag, Th	0.1

CRI (ST120621-6) Exp. 12-18-13

Made By diluting
1.0ml of CRI Stock (ST120621-5) Exp. 12-18-13
to a 100ml final volume.

<u>Element</u>	<u>ug/ml</u>
Ca, Mg, K, Na	5.0
Al, B, Ba	0.4
Fe, U, P, S	0.2
Sb	0.12
Co, Si, Sn, V, Th	0.1
Ni	0.08
Cu, Bi, Zr	0.05
Zn	0.04
Mn	0.03
Ag, Cr, Li, Mo, Sr, Ti, Tl	0.02
Be, Cd, As, Se,	0.01
Pb	0.006

ICSA (ST120621-1) Exp. 12-18-13

<u>Element</u>	<u>ug/ml</u>
Ca, Mg, Al	250
Fe	100

ICSAB (ST120621-2) Exp. 12-18-13

<u>Element</u>	<u>ug/ml</u>
Ca, Mg, Al	250
Fe	100
U	10
B, Si, Li, Mo, Sn, Sr, Ti, Cd, Zn, Ni, P, S	1.0

Sb	0.6
Ba, Be, Co, V, Cr, Cu, Mn, Bi, Zr	0.5
Ag	0.2
As, Tl	0.1
Se, Pb, Th	0.05

Pipette ID Numbers

1.0ml to 5.0ml --- M-55
0.1ml to 1.0ml --- M-61
0.01ml to 0.1ml --- M-57

Acid Lot Numbers

HCl – J35042
HNO₃ – J41037

Inter Element Correction Information

The following table summarizes spectral interferences that have been identified and for which IEC's are used. If a sample contains a concentration of an interfering element that exceeds the upper analytical range, and an affected element is being determined, it is necessary to dilute the sample to bring the interfering element into analytical range.

<u>Interfering Element (ug/ml)</u>	<u>Affected Element</u>
Al (500)	Pb
Mg (500)	Th
Fe (200)	Se, Tl, V, Pb, U
Si (50)	Zr
U (50)	Al, Cr, Cu, Bi, Pb, Se, Ag, Tl, Si, Be
Ba (10)	Co
Cr (10)	Sb
Cu (10)	Bi
Mn (10)	Tl
Mo (10)	Al, Si, Pb, Sb
Ti (10)	Co, Bi, Si, Sn, Tl, Pb, Zr
As (5)	Cd
V (5)	Al, Be, Tl
Zr (5)	Ag

The following table lists element concentrations (ug/ml) that no significant spectral interferences have been observed.

<u>Element</u>	<u>Concentration</u>	<u>Element</u>	<u>Concentration</u>	<u>Element</u>	<u>Concentration</u>
K	500	Se	10	Li	5
Na	500	Pb	10	Cd	5
Ca	500	Zn	10	Co	5
P	50	Sr	10	Ag	2
S	50	Sn	10	Sb	2
Ni	10	Bi	5	Be	1
B	10	Tl	5		

2X – Dilution made by diluting 2.5ml of sample up to a 5ml final volume.
3X - Dilution made by diluting 2.0ml of sample up to a 6ml final volume.
4X - Dilution made by diluting 2.0ml of sample up to a 8ml final volume.
5X - Dilution made by diluting 1.0ml of sample to a 5ml final volume.
10X - Dilution made by diluting 0.5ml of sample to a 5ml final volume.
20X – Dilution made by diluting 0.25ml of sample to a 5ml final volume.
25X – Dilution made by diluting 0.2ml of sample to a 5ml final volume.
50X – Dilution made by diluting 0.1ml of sample to a 5ml final volume.

100X – Dilution made by diluting 0.05ml of sample to a 5ml final volume.
500X – Dilution made by diluting 0.02ml of sample to a 10ml final volume.
1000X – Dilution made by diluting a 10X dilution 100X.

Comments

1303058-1 was post spiked for Sb by spiking 0.1mL ST121101-7 and 0.1mL ST121231-2 onto 4.8mL sample, 5mL final volume.

1303059-1 was post spiked for Sb, Ca, V and Mn by spiking 0.1mL ST121101- and 0.1mL ST121231-2 onto 4.8mL sample, 5mL final volume.

1303060-1 was post spiked for Sb by spiking 0.1mL ST121101-7 and 0.1mL ST121231-2 onto 4.8mL sample, 5mL final volume.

1. Please see run log and work orders for elements of interest.

Daily Maintenance

1. Check/ Change Peristaltic pump tubing.
2. Check the torch for deposits, clean if necessary.
3. Check/ Empty drain water.

Daily Maintenance done by MTL.

Monthly Maintenance

1. Check/Clean nebulizer and spray chamber.
2. Clean air filters
3. Check/Clean entrance slit.
4. Fill water recirculating reservoir.

Monthly maintenance done by: MTL 3-08-2013.

Major problems / adjustments / repairs recorded in the ICP Maintenance Log (3716).

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2
 File Name: 130311A.
 AnalRunID: IT130311-2A1
 CalibRefID: IT130311-2A1

Comment	Inst Sample Name	Lab ID	DF	Date Analyzed	Time Analyzed
	MIXAHIGH	MIXAHIGH	1	3/11/2013	12:30
	MIXBHIGH	MIXBHIGH	1	3/11/2013	12:31
	MIXCHIGH	MIXCHIGH	1	3/11/2013	12:33
	ICV	ICV	1	3/11/2013	12:35
	ICB	ICB	1	3/11/2013	12:37
	CRI	CRI1	1	3/11/2013	12:39
	ICSA	ICSA1	1	3/11/2013	12:41
	ICSAB	ICSAB1	1	3/11/2013	12:43
	CCV	CCV1	1	3/11/2013	12:44
	CCB	CCB1	1	3/11/2013	12:51
	F130301-1MB	F130301-1MB	1	3/11/2013	12:53
	IP130307-2MB	IP130307-2MB	1	3/11/2013	12:55
	IP130307-2LCS	IP130307-2LCS	1	3/11/2013	12:56
	IP130307-3MB	IP130307-3MB	1	3/11/2013	12:58
	IP130307-3LCS	IP130307-3LCS	1	3/11/2013	13:00
	IP130307-4MB	IP130307-4MB	1	3/11/2013	13:02
	IP130307-4LCS	IP130307-4LCS	1	3/11/2013	13:03
- Fe,Pb,Se,Ti,U,V	1303058-1	1303058-1	1	3/11/2013	13:05
- Fe,Pb,Se,Ti,U,V	1303058-1D	1303058-1DUP	1	3/11/2013	13:07
- Fe,Pb,Se,Ti,U,V	1303058-1L 5X	1303058-1SER	5	3/11/2013	13:08
	CCV	CCV2	1	3/11/2013	13:10
	CCB	CCB2	1	3/11/2013	13:12
- Fe,Pb,Se,Ti,U,V	1303058-1MS	1303058-1MS	1	3/11/2013	13:14
- Fe,Pb,Se,Ti,U,V	1303058-1MSD	1303058-1MSD	1	3/11/2013	13:16
- Ti	1303058-2	1303058-2	1	3/11/2013	13:17
- Ti	1303058-3	1303058-3	1	3/11/2013	13:19
- Fe,Pb,Se,Ti,U,V	1303058-4	1303058-4	1	3/11/2013	13:21
- Ti	1303058-5	1303058-5	1	3/11/2013	13:23
- Ti	1303058-6	1303058-6	1	3/11/2013	13:24
- Ti	1303058-7	1303058-7	1	3/11/2013	13:26
- Ti	1303058-8	1303058-8	1	3/11/2013	13:28
- Ti	1303058-9	1303058-9	1	3/11/2013	13:30
	CCV	CCV3	1	3/11/2013	13:32
	CCB	CCB3	1	3/11/2013	13:34
- Ti	1303058-10	1303058-10	1	3/11/2013	13:36

Data Package ID: _____

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Inst Sample Name	Lab ID	DF	Date Analyzed	Time Analyzed
- TI	1303058-11	1303058-11	1	3/11/2013	13:37
- TI	1303058-12	1303058-12	1	3/11/2013	13:39
- TI	1303058-13	1303058-13	1	3/11/2013	13:41
- TI	1303058-14	1303058-14	1	3/11/2013	13:43
	1303059-1	1303059-1	1	3/11/2013	13:44
	1303059-1D	1303059-1DUP	1	3/11/2013	13:46
	1303059-1L 5X	1303059-1SER	5	3/11/2013	13:48
	1303059-1MS	1303059-1MS	1	3/11/2013	13:50
	1303059-1MSD	1303059-1MSD	1	3/11/2013	13:51
	CCV	CCV4	1	3/11/2013	13:54
	CCB	CCB4	1	3/11/2013	15:21
	CCV	CCV5	1	3/11/2013	15:23
	CCB	CCB5	1	3/11/2013	15:25
	1303059-2	1303059-2	1	3/11/2013	15:27
	ZZZ	ZZZ	1	3/11/2013	15:28
	ZZZ	ZZZ	1	3/11/2013	15:33
	CCV	CCV6	1	3/11/2013	15:35
	CCB	CCB6	1	3/11/2013	15:37
	1303059-3	1303059-3	1	3/11/2013	15:39
	1303059-4	1303059-4	1	3/11/2013	15:40
- TI	1303059-5	1303059-5	1	3/11/2013	15:42
	1303059-6	1303059-6	1	3/11/2013	15:44
- TI	1303059-7	1303059-7	1	3/11/2013	15:46
	1303059-8	1303059-8	1	3/11/2013	15:48
- TI	1303059-9	1303059-9	1	3/11/2013	15:49
	1303059-10	1303059-10	1	3/11/2013	15:51
- TI	1303059-11	1303059-11	1	3/11/2013	15:53
	CCV	CCV7	1	3/11/2013	15:55
	CCB	CCB7	1	3/11/2013	15:57
- TI	1303059-12	1303059-12	1	3/11/2013	15:59
- TI	1303059-13	1303059-13	1	3/11/2013	16:01
- TI	1303059-14	1303059-14	1	3/11/2013	16:02
	1303059-15	1303059-15	1	3/11/2013	16:04
	1303060-1	1303060-1	1	3/11/2013	16:06
	1303060-1D	1303060-1DUP	1	3/11/2013	16:08

Data Package ID: _____

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2
 File Name: 130311A.
 AnalRunID: IT130311-2A1
 CalibRefID: IT130311-2A1

Comment	Inst Sample Name	Lab ID	DF	Date Analyzed	Time Analyzed
	1303060-1L 5X	1303060-1SER	5	3/11/2013	16:09
	1303060-1MS	1303060-1MS	1	3/11/2013	16:11
	1303060-1MSD	1303060-1MSD	1	3/11/2013	16:13
	1303060-2	1303060-2	1	3/11/2013	16:15
	CCV	CCV8	1	3/11/2013	16:17
	CCB	CCB8	1	3/11/2013	16:19
	1303060-3	1303060-3	1	3/11/2013	16:20
	1303060-4	1303060-4	1	3/11/2013	16:22
	1303060-5	1303060-5	1	3/11/2013	16:24
	1303060-6	1303060-6	1	3/11/2013	16:26
	1303060-7	1303060-7	1	3/11/2013	16:28
	1303060-8	1303060-8	1	3/11/2013	16:29
	1303060-9	1303060-9	1	3/11/2013	16:31
	1303060-10	1303060-10	1	3/11/2013	16:33
	1303060-11	1303060-11	1	3/11/2013	16:35
	1303060-12	1303060-12	1	3/11/2013	16:36
	CCV	CCV9	1	3/11/2013	16:39
	CCB	CCB9	1	3/11/2013	16:40
	ZZZ	ZZZ	1	3/11/2013	16:42
	ZZZ	ZZZ	1	3/11/2013	16:45
	ZZZ	ZZZ	1	3/11/2013	16:49
+ Ca,Tl	1303057-1 5X	1303057-1	5	3/11/2013	17:08
+ Ca,Tl	1303057-1D 5X	1303057-1DUP	5	3/11/2013	17:10
+ Ca,Tl	1303057-1L 25X	1303057-1SER	25	3/11/2013	17:11
+ Ca,Tl	1303057-1MS 5X	1303057-1MS	5	3/11/2013	17:13
+ Ca,Tl	1303057-1MSD 5X	1303057-1MSD	5	3/11/2013	17:15
	ZZZ	ZZZ	1	3/11/2013	17:17
	CCV	CCV10	1	3/11/2013	17:21
	CCB	CCB10	1	3/11/2013	17:23
+ Fe,Pb,Se,Tl,U,V	1303058-1 5X	1303058-1	5	3/11/2013	17:24
+ Fe,Pb,Se,Tl,U,V	1303058-1D 5X	1303058-1DUP	5	3/11/2013	17:26
+ Fe,Pb,Se,Tl,U,V	1303058-1L 25X	1303058-1SER	25	3/11/2013	17:28
+ Fe,Pb,Se,Tl,U,V	1303058-1MS 5X	1303058-1MS	5	3/11/2013	17:29
+ Fe,Pb,Se,Tl,U,V	1303058-1MSD 5X	1303058-1MSD	5	3/11/2013	17:31
	CCV	CCV11	1	3/11/2013	17:33

Data Package ID: _____

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Inst Sample Name	Lab ID	DF	Date Analyzed	Time Analyzed
	CCB	CCB11	1	3/11/2013	17:36
+ Sb	1303058-1A	1303058-1A	1	3/11/2013	17:38
+ Fe,Pb,Se,Tl,V	1303058-1A 5X	1303058-1A	5	3/11/2013	17:39
+ Ca,Mn,Sb,V	1303059-1A	1303059-1A	1	3/11/2013	17:41
+ Sb,Zr	1303060-1A	1303060-1A	1	3/11/2013	17:43
+ Ti	1303058-2 5X	1303058-2	5	3/11/2013	17:45
+ Ti	1303058-3 5X	1303058-3	5	3/11/2013	17:46
+ Fe,Pb,Se,Tl,U,V	1303058-4 5X	1303058-4	5	3/11/2013	17:48
+ Ti	1303058-5 5X	1303058-5	5	3/11/2013	17:50
+ Ti	1303058-6 5X	1303058-6	5	3/11/2013	17:52
+ Ti	1303058-7 5X	1303058-7	5	3/11/2013	17:53
	CCV	CCV12	1	3/11/2013	17:55
	CCB	CCB12	1	3/11/2013	17:57
+ Ti	1303058-8 5X	1303058-8	5	3/11/2013	17:59
+ Ti	1303058-9 5X	1303058-9	5	3/11/2013	18:01
+ Ti	1303058-10 5X	1303058-10	5	3/11/2013	18:02
+ Ti	1303058-11 5X	1303058-11	5	3/11/2013	18:04
+ Ti	1303058-12 5X	1303058-12	5	3/11/2013	18:06
+ Ti	1303058-13 5X	1303058-13	5	3/11/2013	18:08
+ Ti	1303058-14 5X	1303058-14	5	3/11/2013	18:09
+ Ti	1303059-5 5X	1303059-5	5	3/11/2013	18:11
+ Ti	1303059-7 5X	1303059-7	5	3/11/2013	18:13
+ Ti	1303059-9 5X	1303059-9	5	3/11/2013	18:15
	CCV	CCV13	1	3/11/2013	18:17
	CCB	CCB13	1	3/11/2013	18:18
+ Ti	1303059-11 5X	1303059-11	5	3/11/2013	18:20
+ Ti	1303059-12 5X	1303059-12	5	3/11/2013	18:22
+ Ti	1303059-13 5X	1303059-13	5	3/11/2013	18:24
+ Ti	1303059-14 5X	1303059-14	5	3/11/2013	18:26
+ Ti	1303060-9 5X	1303060-9	5	3/11/2013	18:27
+ Ti	1303060-10 5X	1303060-10	5	3/11/2013	18:29
+ Ti	1303060-1 5X	1303060-1	5	3/11/2013	18:31
+ Ti	1303060-1D 5X	1303060-1DUP	5	3/11/2013	18:33
+ Ti	1303060-1L 25X	1303060-1SER	25	3/11/2013	18:34
+ Ti	1303060-1MS 5X	1303060-1MS	5	3/11/2013	18:36

Data Package ID:

ICPTrace2 Run Log -- 3/11/2013

Instrument ID: ICPTrace2

File Name: 130311A.

AnalRunID: IT130311-2A1

CalibRefID: IT130311-2A1

Comment	Inst Sample Name	Lab ID	DF	Date Analyzed	Time Analyzed
	CCV	CCV14	1	3/11/2013	18:38
	CCB	CCB14	1	3/11/2013	18:52
+ TI	1303060-1MSD 5X	1303060-1MSD	5	3/11/2013	18:56
+ TI	1303060-2 5X	1303060-2	5	3/11/2013	18:57
+ TI	1303060-3 5X	1303060-3	5	3/11/2013	18:59
+ TI	1303060-4 5X	1303060-4	5	3/11/2013	19:01
+ TI	1303060-5 5X	1303060-5	5	3/11/2013	19:03
+ TI	1303060-6 5X	1303060-6	5	3/11/2013	19:05
+ TI	1303060-7 5X	1303060-7	5	3/11/2013	19:06
+ TI	1303060-8 5X	1303060-8	5	3/11/2013	19:08
+ TI	1303060-11 5X	1303060-11	5	3/11/2013	19:10
+ TI	1303060-12 5X	1303060-12	5	3/11/2013	19:12
	CCV	CCV15	1	3/11/2013	19:14
	CCB	CCB15	1	3/11/2013	19:15
+ TI	1303057-2 5X	1303057-2	5	3/11/2013	19:17
+ TI	1303057-3 5X	1303057-3	5	3/11/2013	19:19
+ TI	1303057-4 5X	1303057-4	5	3/11/2013	19:21
+ TI	1303057-5 5X	1303057-5	5	3/11/2013	19:23
+ TI	1303057-6 5X	1303057-6	5	3/11/2013	19:24
+ TI	1303057-7 5X	1303057-7	5	3/11/2013	19:26
+ TI	1303057-8 5X	1303057-8	5	3/11/2013	19:28
+ TI	1303057-10 5X	1303057-10	5	3/11/2013	19:30
+ TI	1303057-11 5X	1303057-11	5	3/11/2013	19:32
+ TI	1303057-12 5X	1303057-12	5	3/11/2013	19:33
	CCV	CCV16	1	3/11/2013	19:35
	CCB	CCB16	1	3/11/2013	19:37
+ TI	1303057-13 5X	1303057-13	5	3/11/2013	19:39
+ TI	1303057-14 5X	1303057-14	5	3/11/2013	19:41
+ TI	1303057-15 5X	1303057-15	5	3/11/2013	19:42
	CRI	CRI2	1	3/11/2013	19:44
	ICSA	ICSA2	1	3/11/2013	19:46
	ICSAB	ICSAB2	1	3/11/2013	19:48
	CCV	CCV17	1	3/11/2013	19:50
	CCB	CCB17	1	3/11/2013	19:52

Data Package ID: _____

Sample Id1	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Li
MIXAHIGH	0.0012	500.0262	0.0048	-0.0088	-0.0006	0.0005	0.0237	496.4546	0.0004	0.0013	0.0006	-0.0084	197.5316	9.8024
MIXBHIGH	1.9944	0.2236	4.9976	9.954	9.9131	0.9853	0.0055	0.0514	4.9835	4.9539	9.8979	9.9766	0.0318	-0.0007
MIXCHIGH	-0.0044	0.3768	-0.0012	0.0212	-0.001	0.0163	5.0302	-0.0569	-0.0014	0.0051	-0.0137	-0.0115	-0.0115	-0.0011
ICV	0.0993	25.7989	0.2619	0.5121	0.5217	0.255	0.2606	25.7153	0.2581	0.25	0.5061	0.5133	10.3148	0.2475
ICB	-0.0001	0.045	-0.0038	-0.0014	0.001	0	-0.0022	-0.0427	0.0001	-0.0004	-0.0002	-0.0005	0.0103	-0.0026
CRI	0.0209	0.4453	0.0119	0.4125	0.4259	0.0119	0.0561	5.2266	0.0116	0.1031	0.0218	0.053	0.2086	0.0149
ICSA	-0.0004	272.8268	-0.0016	0.0009	-0.0003	0.0003	0.0072	269.1345	0.0003	0.0025	-0.0018	-0.0064	110.2203	-0.0027
ICSAB	0.1983	261.7423	0.104	0.9946	0.5086	0.4934	0.54	258.7213	1.002	0.4759	0.4789	0.5333	106.1611	1.0532
CCV	0.1925	49.6602	0.5094	0.993	1.013	0.4864	0.5196	50.0162	0.5047	0.4803	0.969	0.9919	20.0699	0.5121
CCB	-0.0002	0.0243	-0.0002	-0.0064	-0.0001	0	-0.0016	-0.063	0	-0.0008	-0.0006	-0.0016	0.003	-0.0027
F130301-1MB	-0.0001	-0.0029	-0.0013	-0.0073	-0.0012	-0.0002	0.0014	-0.1017	-0.0006	-0.001	-0.0013	-0.0021	-0.0117	-0.003
IP130307-2MB	0.0001	0.0091	-0.0003	-0.0067	-0.0011	-0.0002	-0.0006	-0.0872	-0.0006	-0.0013	-0.0014	-0.0021	0.0182	-0.0031
IP130307-2LCS	0.0897	1.9114	0.9671	0.8882	0.9956	0.0476	0.0001	37.8342	0.0493	0.4683	0.1909	0.2514	0.99	0.4729
IP130307-3MB	-0.0002	0.0172	-0.0005	-0.0059	-0.0009	-0.0002	-0.0019	-0.0766	-0.0004	-0.001	-0.0009	-0.0021	0.01	-0.0029
IP130307-3LCS	0.091	1.9391	0.9848	0.9012	1.0044	0.0486	0.0032	38.7298	0.0502	0.4781	0.1947	0.2543	1.0007	0.4746
IP130307-4MB	-0.0004	0.0068	0.0011	-0.0062	-0.0011	-0.0002	-0.0033	-0.0664	-0.0005	-0.0017	-0.001	-0.0014	0.0157	-0.003
IP130307-4LCS	0.0903	1.9174	0.9775	0.8934	1.008	0.0485	-0.0039	38.4682	0.0501	0.4737	0.1945	0.2552	1.0008	0.4837
1303058-1	-0.002	99.2744	0.0852	0.0295	0.9725	0.0086	0.0137	51.1374	0.0007	0.0702	0.0809	0.0973	229.2645	0.1104
1303058-1D	-0.0038	99.7122	0.0859	0.0256	0.9814	0.0086	0.0076	50.7366	0.0002	0.0678	0.08	0.098	229.4472	0.1127
1303058-1L 5X	-0.0005	19.716	0.0128	0.0006	0.1994	0.0017	0.0066	10.406	-0.0002	0.0142	0.016	0.0184	41.4743	0.0167
CCV	0.1953	50.0239	0.5234	1.0033	1.0259	0.4896	0.5242	50.6395	0.5136	0.485	0.9761	1.0089	20.1537	0.5175
CCB	-0.0008	0.058	-0.0012	-0.0071	-0.0002	0.0002	-0.0028	-0.0619	-0.0004	-0.0008	-0.0005	-0.0008	0.0037	-0.0027
1303058-1MS	0.0911	129.5595	1.0698	0.7878	1.9939	0.0571	0.0163	86.1843	0.0523	0.5416	0.2816	0.358	225.4524	0.6587
1303058-1MSD	0.0882	126.1509	1.0394	0.7673	1.944	0.0559	0.0163	86.2635	0.0506	0.5277	0.2754	0.3512	220.0904	0.6433
1303058-2	-0.0019	55.3815	0.0649	0.0175	1.2213	0.0056	0.0072	89.4339	-0.0002	0.0372	0.0419	0.048	137.1289	0.061
1303058-3	-0.0017	69.6614	0.0639	0.0189	2.1019	0.0056	0.0086	103.2203	-0.0002	0.0394	0.0549	0.0588	150.4766	0.0869
1303058-4	-0.0021	78.0686	0.0735	0.0193	0.9072	0.0081	0.013	130.567	0.0004	0.0548	0.0607	0.0759	208.0173	0.105
1303058-5	-0.001	64.8893	0.0619	0.015	1.7906	0.0064	0.0089	81.7537	0.0005	0.0438	0.0532	0.066	159.6101	0.0779
1303058-6	-0.0013	51.0684	0.0785	0.0097	0.6089	0.0076	0.0108	62.7897	0.0003	0.0432	0.0438	0.0519	182.0365	0.0687
1303058-7	-0.0005	54.7396	0.0709	0.0152	0.7579	0.0063	0.0131	85.3776	0.0004	0.0438	0.0413	0.047	144.6723	0.0694
1303058-8	-0.0012	54.3591	0.0624	0.0126	1.1107	0.0056	0.0109	96.0533	0.0001	0.0409	0.0443	0.0477	128.6216	0.0688
1303058-9	-0.0021	24.9022	0.1298	0.0096	0.4922	0.013	0.0018	332.5581	-0.0006	0.0181	0.0124	0.0171	69.3396	0.0293
CCV	0.1914	48.9991	0.5141	0.9844	1.0072	0.4747	0.5289	49.3208	0.5109	0.4741	0.9505	0.9968	19.46	0.5099
CCB	-0.0002	0.0862	-0.0033	-0.0056	0.0001	0.0003	-0.0005	-0.0436	-0.0001	-0.0009	-0.0002	-0.0015	0.0128	-0.0026
1303058-10	-0.0019	17.2628	0.1301	0.009	0.3056	0.0124	0.0035	357.9069	-0.0007	0.0158	0.005	0.0099	65.1319	0.0208
1303058-11	-0.0011	62.7936	0.0791	0.0134	1.9961	0.0048	0.0139	77.1748	0.0004	0.0324	0.0449	0.0437	137.2263	0.0679
1303058-12	-0.0019	35.1871	0.0386	0.008	0.7023	0.0031	0.0037	61.8674	-0.0001	0.0322	0.0232	0.0333	101.5901	0.0522
1303058-13	-0.0013	54.9439	0.0543	0.0161	0.7465	0.0052	0.0021	120.5174	0.0001	0.0411	0.0392	0.0398	139.337	0.0711

Sample Id1	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Li
1303058-14	-0.0011	43.0899	0.035	0.0125	0.5824	0.0042	0.0073	14.9256	0.0013	0.0434	0.0504	0.0826	114.5642	0.0431
1303059-1	-0.001	27.7704	0.9211	0.0088	0.4312	0.0048	0.008	110.7303	0.0002	0.0168	0.0119	0.027	91.2147	0.0254
1303059-1D	-0.0016	27.1072	0.8653	0.0075	0.4144	0.0045	0.0076	135.8309	0	0.0155	0.0116	0.027	90.5635	0.0251
1303059-1L 5X	-0.0013	5.7149	0.1859	-0.0063	0.0863	0.0011	0.0002	22.1414	-0.0004	0.0024	0.0011	0.0032	17.3831	0.002
1303059-1MS	0.0913	42.3762	1.8855	0.8068	1.4584	0.0534	0.0071	166.1165	0.0519	0.4843	0.2073	0.2896	95.6592	0.5476
1303059-1MSD	0.0903	42.4068	1.828	0.7918	1.421	0.0527	0.0104	287.7196	0.0514	0.4762	0.2024	0.2875	94.3092	0.5577
CCV	0.194	49.1161	0.5208	0.9963	1.0136	0.4765	0.5318	49.7068	0.5192	0.4782	0.9566	1.0094	19.5122	0.5133
CCB	0.0008	0.0897	0.0019	-0.0072	-0.0001	0.0006	0.0034	-0.0602	-0.0004	-0.0002	0.0002	-0.002	0.0063	-0.0029
CCV	0.1983	48.8248	0.5175	0.9824	0.9911	0.4781	0.5358	48.7894	0.5162	0.4825	0.9577	1.0061	19.084	0.5143
CCB	-0.0002	0.0695	-0.0023	-0.0068	-0.0002	0.0006	-0.0016	-0.0571	-0.0001	-0.0007	-0.0003	-0.0024	0.008	-0.0027
1303059-2	0.0008	17.1485	0.0221	0.0017	0.336	0.0022	0.0021	19.9705	0	0.0105	0.0127	0.0127	32.0243	0.011
ZZZ	-0.004	26.9493	1.1149	0.0254	0.3499	0.0277	0.0011	49.3451	-0.0011	0.0201	0.0001	0.005	67.2212	0.027
ZZZ	-0.0019	25.859	0.9901	0.0205	0.3489	0.0214	0.0025	54.1309	-0.0004	0.0171	0.003	0.0112	72.063	0.0261
CCV	0.1977	48.677	0.5093	0.979	0.9955	0.4774	0.5386	48.8956	0.5163	0.481	0.9585	1.0058	19.1214	0.5115
CCB	0.0001	0.0727	-0.0003	-0.0066	-0.0001	0.0006	0.0019	-0.0533	-0.0003	-0.0008	-0.0002	-0.0022	0.0095	-0.0027
1303059-3	-0.0041	27.2638	1.1331	0.0264	0.3542	0.0287	0.0052	50.1859	-0.0009	0.0206	0.0013	0.0051	68.2691	0.0273
1303059-4	-0.0023	26.4047	1.0176	0.0193	0.3554	0.0226	0.0035	55.3793	-0.001	0.0178	0.0042	0.0111	73.7484	0.0267
1303059-5	-0.0019	17.0289	0.0635	0.001	0.3543	0.0037	0.0025	62.7778	-0.0002	0.0122	0.012	0.0193	32.672	0.0114
1303059-6	-0.0009	24.7228	0.206	0.0014	0.2304	0.0063	0.0018	59.7883	0	0.0295	0.0122	0.0444	57.0885	0.0297
1303059-7	-0.0009	23.7328	0.103	0.0054	0.3778	0.0046	0.0003	48.6698	-0.0002	0.0168	0.0139	0.0253	48.296	0.0201
1303059-8	-0.0048	20.3308	0.1916	0.0181	0.3118	0.0198	-0.0019	28.0794	-0.0007	0.0189	0.001	0.006	44.9354	0.0176
1303059-9	-0.001	16.1121	0.0571	0.0017	0.3192	0.0031	0.002	40.8994	-0.0001	0.0112	0.0111	0.0146	34.5144	0.0121
1303059-10	-0.0015	17.9079	0.0626	0.0016	0.3442	0.0031	0.0025	58.305	0	0.0168	0.0142	0.0276	39.2801	0.0134
1303059-11	-0.0006	15.4488	0.0824	0.0009	0.269	0.0037	0.0047	45.9854	-0.0004	0.012	0.01	0.0182	36.5325	0.0118
CCV	0.1988	49.1612	0.5249	0.9944	1.0096	0.4948	0.5352	49.5206	0.5245	0.4927	0.9886	1.0215	19.3608	0.5186
CCB	-0.0003	0.0839	0.0016	-0.0071	0	0.0009	0.0004	-0.0464	-0.0004	-0.0008	-0.0001	-0.0021	0.0126	-0.0026
1303059-12	-0.0009	27.0059	0.0178	0.0036	0.4502	0.0031	-0.0003	11.3514	0	0.0171	0.0227	0.0315	44.6769	0.0165
1303059-13	-0.0018	59.7653	0.0531	0.0161	0.8391	0.006	0.0053	175.5696	0.0007	0.0449	0.0579	0.0774	147.0268	0.0818
1303059-14	-0.0011	8.327	0.0069	-0.0072	0.2399	0.0013	-0.0047	2.5554	-0.0005	0.0046	0.005	0.0027	21.2316	0.0017
1303059-15	-0.001	8.1307	0.0075	-0.0066	0.1596	0.0012	-0.0017	2.0499	-0.0003	0.0045	0.0058	0.0045	18.6479	0.0019
1303060-1	-0.0022	63.8524	0.0553	0.0262	0.7761	0.0065	0.008	145.0178	0.0006	0.0522	0.0619	0.0958	151.9947	0.0785
1303060-1D	-0.0022	63.304	0.0565	0.0262	0.7678	0.0065	0.0062	144.7299	0.0009	0.0521	0.0614	0.0943	150.0758	0.0777
1303060-1L 5X	-0.0012	13.4139	0.0121	-0.002	0.1623	0.0014	-0.0008	29.9973	-0.0003	0.0103	0.0124	0.0164	29.5455	0.0115
1303060-1MS	0.0931	87.3424	1.0422	0.8416	1.7843	0.0566	0.0072	181.2491	0.0529	0.5326	0.2715	0.3605	157.3018	0.6224
1303060-1MSD	0.0928	88.2155	1.015	0.8229	1.7637	0.0557	0.0029	181.1486	0.0513	0.5237	0.2661	0.354	157.9329	0.613
1303060-2	-0.0026	47.3767	0.2262	0.0173	0.9733	0.0114	0.008	119.6886	0.0006	0.036	0.0308	0.0599	122.1685	0.0647
CCV	0.2006	49.1911	0.5259	0.9933	1.0098	0.496	0.5348	49.7067	0.5253	0.4942	0.9921	1.0196	19.3668	0.5177
CCB	0.0003	0.0919	-0.0007	-0.0059	0.0002	0.0004	-0.0022	-0.0355	0	-0.0005	-0.0001	-0.002	0.0181	-0.0025

Sample Id1	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Li
1303060-3	-0.0013	50.8568	0.0931	0.0202	0.7778	0.0069	-0.0006	73.0503	0.0009	0.0348	0.0432	0.0729	115.7981	0.0551
1303060-4	-0.0013	38.6134	0.179	0.017	0.6835	0.0074	0.0046	282.1307	0.0007	0.035	0.0318	0.0549	103.6307	0.0567
1303060-5	-0.0015	52.6371	0.2194	0.0213	1.1089	0.0109	0.0089	111.5327	0.0009	0.0394	0.0376	0.0695	129.1461	0.0669
1303060-6	-0.0013	74.2469	0.1244	0.0422	1.1182	0.0084	0.0076	138.0318	0.0012	0.0542	0.0703	0.1195	160.7279	0.0897
1303060-7	-0.0011	45.155	0.153	0.0251	0.7822	0.0079	-0.003	178.36	0.0009	0.0368	0.0431	0.0894	116.6545	0.0561
1303060-8	-0.0019	48.3526	0.1746	0.0239	0.776	0.009	0.0069	153.6373	0.0008	0.0386	0.0428	0.0796	116.3236	0.0581
1303060-9	-0.001	38.0672	0.0416	0.0046	2.0597	0.005	0.0055	52.6074	0.001	0.0266	0.0323	0.0453	107.9429	0.0486
1303060-10	-0.0005	49.1841	0.1404	0.0248	0.896	0.0079	0.0089	159.8964	0.0016	0.0327	0.0463	0.1125	123.4264	0.0658
1303060-11	-0.0016	83.1953	0.1206	0.0551	1.0472	0.0084	0.0091	115.4879	0.0012	0.0535	0.0755	0.1142	171.1152	0.0947
1303060-12	-0.0014	31.0065	0.0334	0.0124	0.7632	0.0037	0.0011	181.1676	0	0.0325	0.032	0.0426	89.0392	0.0459
CCV	0.202	49.4925	0.5268	1.0067	1.0144	0.4995	0.5485	50.1014	0.5324	0.4993	1.0012	1.0312	19.5145	0.5219
CCB	0.0005	0.1101	-0.0005	-0.0065	0.0003	0.0005	0.0034	-0.0241	0.0002	0.0002	0.0005	-0.0014	0.0265	-0.0025
ZZZ	-0.0009	12.6199	0.0147	-0.0045	0.196	0.0015	0.0026	136.9959	-0.0002	0.0062	0.0084	0.0064	24.1697	0.0114
ZZZ	-0.0001	13.9824	0.018	-0.004	0.2172	0.0015	0.0032	43.3607	-0.0003	0.0082	0.0093	0.0088	28.8272	0.0107
ZZZ	-0.0007	13.2318	0.0164	-0.0045	0.2057	0.0017	0.0044	97.3049	0.0002	0.0072	0.0094	0.008	26.0848	0.0113
1303057-1 5X	-0.0004	12.8929	0.01	-0.0052	0.2002	0.0016	0.0023	140.2001	-0.0004	0.0069	0.0084	0.0063	24.6749	0.0115
1303057-1D 5X	-0.0004	13.8597	0.0161	-0.0044	0.216	0.0015	0.0009	42.9145	-0.0004	0.0079	0.0091	0.0074	28.5236	0.0105
1303057-1L 25X	-0.0006	2.683	-0.0026	-0.0094	0.0395	0.0004	-0.0005	27.3989	-0.0008	0.0005	0.0006	-0.003	4.9289	-0.0005
1303057-1MS 5X	0.0187	18.4578	0.2219	0.1697	0.4556	0.0115	0.0047	25.2362	0.0105	0.1072	0.0508	0.0628	23.9374	0.1062
1303057-1MSD 5X	0.0186	19.7307	0.2279	0.1701	0.414	0.0117	0.0018	21.8586	0.0102	0.1076	0.0512	0.062	28.9172	0.1082
ZZZ	0.1946	49.1536	0.5267	0.9976	1.0073	0.4718	0.544	49.7352	0.5307	0.4801	0.9523	1.0237	19.3119	0.5196
CCV	0.1949	50.8531	0.5212	0.9893	1.0158	0.4999	0.5142	50.6536	0.5014	0.491	0.9921	1.0086	20.2133	0.522
CCB	0.0001	0.055	-0.0015	-0.0051	0.0006	0.0002	0.0024	0.0089	0	-0.0005	0.0004	-0.0001	0.0463	-0.0024
1303058-1 5X	0.0008	19.9173	0.0188	0.0006	0.1975	0.0014	0.0092	10.3834	0	0.0152	0.0171	0.0196	41.3038	0.0169
1303058-1D 5X	-0.0012	19.9266	0.0165	-0.0014	0.199	0.0014	0.0024	10.3696	-0.0005	0.0142	0.0164	0.0183	41.774	0.0172
1303058-1L 25X	-0.0008	3.9171	0.0038	-0.0067	0.0383	-0.0002	-0.0035	2.018	-0.0005	0.0017	0.002	0.001	7.9206	0.0006
1303058-1MS 5X	0.0177	25.7275	0.2157	0.1539	0.4016	0.0117	-0.0005	17.5083	0.0098	0.1127	0.0591	0.0694	41.5468	0.1135
1303058-1MSD 5X	0.0178	25.4342	0.2158	0.1526	0.3949	0.0117	0.003	17.8187	0.0099	0.1125	0.0586	0.0684	41.2106	0.1115
CCV	0.1953	50.7567	0.5216	0.9866	1.0146	0.4994	0.5114	50.6219	0.5017	0.4905	0.9891	1.0062	20.194	0.5209
CCB	0.001	0.0642	-0.0019	-0.0061	0.001	0.0002	0.0016	0.015	0.0001	-0.0001	0.0008	0.0002	0.0507	-0.0024
1303058-1A	-0.0018	98.8067	1.0351	0.9201	1.8784	0.0545	0.0128	88.3452	0.0493	0.5232	0.2614	0.3447	213.8544	0.6393
1303058-1A 5X	-0.0001	22.0518	0.9841	0.9031	1.1691	0.0497	0.0022	10.464	0.0482	0.4858	0.2078	0.2665	42.8863	0.0174
1303059-1A	-0.0013	28.7267	1.7924	0.8672	1.312	0.0486	0.0077	146.08	0.0473	0.4489	0.1872	0.2623	87.7759	0.5407
1303060-1A	-0.0011	64.1215	0.9106	0.8211	1.594	0.0479	0.005	176.1355	0.0442	0.4572	0.224	0.3151	149.3114	0.5513
1303058-2 5X	-0.0002	11.3169	0.0156	0	0.2469	0.0007	0.0019	17.8751	-0.0003	0.0074	0.0081	0.0083	25.4684	0.0087
1303058-3 5X	-0.0005	14.2334	0.0164	-0.0013	0.426	0.0007	0.0018	20.7634	-0.0005	0.0082	0.0109	0.0103	28.1958	0.0129
1303058-4 5X	-0.0005	16.1102	0.0168	-0.0024	0.1853	0.0012	0.0016	26.5635	-0.0004	0.0118	0.0128	0.0138	39.1754	0.0161
1303058-5 5X	-0.0016	13.2417	0.0108	-0.0044	0.3622	0.0008	0.0066	16.5798	-0.0003	0.0084	0.0101	0.0113	29.9463	0.0113

Sample Id1	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Li
1303058-6 5X	-0.0007	10.6796	0.0168	-0.0054	0.1256	0.001	0.0048	13.0934	-0.0003	0.0089	0.0087	0.0093	34.6657	0.01
1303058-7 5X	-0.0012	11.4075	0.0118	-0.005	0.1557	0.0008	-0.0008	17.4551	-0.0005	0.0083	0.0082	0.0083	27.6657	0.01
CCV	0.194	50.702	0.5198	0.9891	1.0151	0.4981	0.5186	50.5458	0.5016	0.4894	0.987	1.0093	20.156	0.5201
CCB	0	0.0612	0.0015	-0.0065	0.0008	0.0002	0.0001	0.0151	0.0001	-0.0004	0.0002	-0.0001	0.0521	-0.0023
1303058-8 5X	-0.0002	11.1821	0.0104	-0.0037	0.2237	0.0006	0.0014	19.4678	-0.0005	0.008	0.0087	0.0079	24.4741	0.0097
1303058-9 5X	-0.0006	5.2704	0.0289	-0.0049	0.1008	0.0022	0.0004	64.9841	-0.0006	0.0036	0.0019	0.0022	14.0231	0.0028
1303058-10 5X	0.0009	3.7554	0.0283	-0.0045	0.0643	0.0022	0.0043	72.1368	-0.0001	0.0038	0.0018	0.0027	13.7143	0.0015
1303058-11 5X	-0.0005	13.2037	0.0188	-0.0054	0.4146	0.0005	0.0006	16.0719	-0.0006	0.006	0.0088	0.0077	26.7855	0.0099
1303058-12 5X	-0.0002	7.3155	0.0065	-0.0061	0.1424	0.0002	-0.0008	12.7386	-0.0003	0.0063	0.0044	0.0053	19.7422	0.007
1303058-13 5X	-0.0009	11.3671	0.0141	-0.0046	0.1507	0.0006	0.004	24.2482	-0.0001	0.0085	0.0079	0.0066	26.5377	0.01
1303058-14 5X	0.0003	8.9597	0.0102	-0.0049	0.1195	0.0004	0.0027	3.1107	0.0002	0.0099	0.0111	0.0164	22.2167	0.0054
1303059-5 5X	-0.0008	3.532	0.0128	-0.0072	0.0716	0.0001	0.0008	12.7983	-0.0007	0.0019	0.0014	0.0029	6.698	-0.0003
1303059-7 5X	0.0003	4.9529	0.0173	-0.0058	0.0763	0.0003	0	10.0133	-0.0002	0.0032	0.0027	0.0047	9.7624	0.0012
1303059-9 5X	-0.0005	3.3383	0.0107	-0.0064	0.0638	0	-0.0021	8.3924	-0.0005	0.0015	0.0011	0.0014	7.062	-0.0001
CCV	0.1913	49.4746	0.5034	0.9595	0.9817	0.4875	0.4964	49.2597	0.489	0.4778	0.9678	0.9801	19.6214	0.5095
CCB	-0.0006	-0.004	-0.0005	-0.0075	-0.0006	-0.0003	-0.0034	-0.0687	-0.0006	-0.0007	-0.0005	-0.0012	0.0061	-0.0027
1303059-11 5X	-0.0001	3.1745	0.0174	-0.0058	0.0533	0	0.0043	9.2431	-0.0006	0.0017	0.0013	0.0025	7.3306	-0.0003
1303059-12 5X	-0.0002	5.7372	0.002	-0.0055	0.0942	0.0001	0.0013	2.3706	-0.0004	0.0027	0.004	0.0057	9.2994	0.0008
1303059-13 5X	-0.0004	12.8905	0.013	-0.004	0.1774	0.0007	-0.0002	36.3397	-0.0006	0.0092	0.0119	0.0149	29.663	0.0123
1303059-14 5X	-0.0004	1.8158	-0.0013	-0.0094	0.0508	-0.0003	-0.0009	0.4933	-0.0006	0.0004	0	-0.0007	4.6058	-0.0019
1303060-9 5X	-0.0006	8.3289	0.0061	-0.0071	0.4413	0.0005	0.0031	11.445	-0.0004	0.0041	0.0061	0.0084	22.3096	0.0067
1303060-10 5X	-0.0009	11.0121	0.0271	-0.0031	0.1941	0.001	0.0018	34.4676	0	0.0066	0.0096	0.0219	26.1147	0.0096
1303060-1 5X	-0.0004	13.8765	0.0099	-0.0012	0.1626	0.0009	0.0016	30.3655	-0.0003	0.0107	0.0129	0.0185	30.7357	0.0118
1303060-1D 5X	-0.0008	13.5829	0.0104	-0.0015	0.1597	0.0008	0.0025	30.0492	0.0002	0.0106	0.0127	0.0173	30.0103	0.0115
1303060-1L 25X	-0.0018	2.7092	0.0007	-0.0086	0.0314	-0.0002	-0.0015	6.0161	-0.0007	0.001	0.0009	0.0015	5.9708	-0.0003
1303060-1MS 5X	0.0186	18.7771	0.2179	0.1708	0.3754	0.0116	0.0045	37.7673	0.0105	0.113	0.0577	0.0717	31.8725	0.1104
CCV	0.1931	50.2414	0.5138	0.979	0.9978	0.4962	0.5128	50.2568	0.4976	0.4869	0.9827	0.9981	19.9805	0.5165
CCB	0.0002	-0.005	-0.0018	-0.0088	-0.0006	-0.0003	-0.0051	-0.0708	-0.0003	-0.0009	-0.0005	-0.0013	0.0054	-0.0028
1303060-1MSD 5X	0.0191	19.3638	0.2253	0.1706	0.3793	0.0118	0.0041	38.5129	0.0106	0.1143	0.0581	0.0729	32.6443	0.111
1303060-2 5X	0.0004	10.2719	0.0494	-0.0034	0.2048	0.0015	0.0011	25.0413	-0.0002	0.0081	0.0067	0.012	24.5807	0.0092
1303060-3 5X	0	10.9359	0.0194	-0.0035	0.1621	0.0008	-0.005	15.4067	-0.0002	0.0064	0.0085	0.0134	23.1783	0.0076
1303060-4 5X	-0.0008	8.1876	0.0344	-0.0048	0.1383	0.0008	0.0015	54.8791	-0.0004	0.006	0.006	0.0097	20.4837	0.0073
1303060-5 5X	-0.0011	11.049	0.0439	-0.0032	0.2253	0.0013	0.0038	22.4996	-0.0003	0.0075	0.0067	0.012	24.9909	0.0093
1303060-6 5X	-0.001	15.9296	0.0238	0.0005	0.2331	0.0011	-0.0011	28.5976	-0.0002	0.0108	0.0138	0.0225	32.017	0.0137
1303060-7 5X	-0.0007	9.9483	0.0296	-0.0033	0.165	0.0009	0.0001	37.082	-0.0001	0.0072	0.0086	0.0169	23.8876	0.0077
1303060-8 5X	-0.0004	10.7861	0.0349	-0.0028	0.1654	0.0011	0.0046	32.3594	0.0002	0.0081	0.0089	0.0154	23.9177	0.0083
1303060-11 5X	-0.0013	18.0107	0.0247	0.005	0.2228	0.0012	-0.0026	24.4873	-0.0002	0.0109	0.0155	0.0222	34.4581	0.0148
1303060-12 5X	0.0005	6.9191	0.008	-0.0043	0.1642	0.0003	0.0007	38.3777	-0.0003	0.007	0.0073	0.0092	18.8557	0.0061

Sample Id1	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Li
CCV	0.1942	50.2481	0.5186	0.9801	0.9979	0.4959	0.5056	50.3028	0.4986	0.488	0.9837	0.9981	19.9856	0.5164
CCB	-0.0006	0.0012	-0.0073	-0.0078	-0.0005	-0.0002	0.0042	-0.0658	-0.0002	-0.0009	-0.0007	-0.0014	0.0081	-0.0027
1303057-2 5X	-0.0001	7.9297	0.0143	-0.0045	0.1964	0.0006	0.0021	18.3354	-0.0003	0.0038	0.0048	0.0085	16.36	0.0051
1303057-3 5X	-0.0001	6.5663	0.0131	-0.0051	0.2686	0.0003	0.0014	16.4071	-0.0002	0.0033	0.0033	0.0059	16.8214	0.0052
1303057-4 5X	-0.0004	5.8733	0.0107	-0.0076	0.3985	0.0003	-0.0018	15.663	-0.0003	0.0025	0.0014	0.0037	12.3633	0.0042
1303057-5 5X	-0.0001	6.2984	0.01	-0.0071	0.2879	0.0005	-0.0009	16.3381	-0.0004	0.0029	0.0019	0.0047	12.4669	0.0049
1303057-6 5X	-0.0007	4.2257	0.0089	-0.0079	0.0992	0.0008	-0.0052	15.2385	-0.0006	0.0019	0.0002	0.002	11.5775	0.0022
1303057-7 5X	0.0005	5.3627	0.0132	-0.0063	0.2341	0.0009	0.0045	16.417	-0.0003	0.0031	0.0024	0.0033	13.4183	0.0035
1303057-8 5X	-0.0006	9.1918	0.0158	-0.0063	0.2827	0.0009	-0.0002	15.7478	-0.0001	0.0059	0.0046	0.0083	27.3842	0.0063
1303057-10 5X	-0.0007	3.4152	0.0168	-0.0078	0.136	0.0009	-0.0029	15.4273	-0.0004	0.0022	0.001	0.0024	11.6667	0.0012
1303057-11 5X	-0.0004	2.9984	0.0136	-0.0092	0.0983	0.0008	0.0005	18.6585	-0.0005	0.0021	0.0003	0.0023	10.4689	0.0008
1303057-12 5X	0.0011	16.737	0.0126	-0.001	0.1617	0.0011	0.01	5.2526	0.0006	0.0137	0.0167	0.0202	30.9765	0.0107
CCV	0.1938	50.2747	0.5121	0.9798	1.001	0.4941	0.513	50.0979	0.4998	0.4857	0.98	1.0018	19.9407	0.518
CCB	-0.0007	-0.0031	0.0004	-0.0089	-0.0007	-0.0003	-0.0016	-0.0678	-0.0004	-0.0011	-0.0011	-0.0016	0.0074	-0.0027
1303057-13 5X	-0.0006	19.1962	0.0142	-0.002	0.2021	0.0011	0.0033	24.9764	-0.0002	0.0118	0.0172	0.0254	35.6479	0.0149
1303057-14 5X	-0.0007	14.3281	0.0115	0.0008	0.1708	0.0006	-0.0005	63.8594	0	0.0082	0.0111	0.0158	24.9904	0.013
1303057-15 5X	-0.0011	12.636	0.007	-0.0017	0.1685	0.0007	0.0001	5.2851	-0.0001	0.0105	0.0119	0.0213	27.2227	0.0079
CRI	0.0205	0.3949	0.0107	0.3917	0.4103	0.0115	0.0526	5.0719	0.0111	0.1013	0.021	0.0516	0.1978	0.0147
ICSA	-0.0001	265.8531	0.0002	-0.0033	-0.0005	0.0001	0.0047	261.2686	0.0004	0.0031	-0.0012	-0.0054	105.5023	-0.0027
ICSAB	0.199	264.4318	0.1094	0.9819	0.5038	0.5022	0.5294	259.584	0.9891	0.4827	0.4857	0.5359	105.3266	1.0558
CCV	0.195	50.3524	0.5208	0.9853	0.9995	0.4991	0.5118	50.6122	0.5015	0.4908	0.989	1.0006	20.0986	0.5165
CCB	0.0016	0.017	0.001	-0.005	-0.0002	-0.0002	0.0109	-0.0641	0.0003	0.0009	0.0006	0.0007	0.0097	-0.0027

Sample Id1	K	Mg	Mn	Mo	Na	Ni	P	Pb	Pb I	Pb II	S	Sb	Se	Se I
MIXAHIGH	249.5111	495.5976	0.0062	-0.002	150.7543	0.0012	0.0036	-0.0081	0.0358	-0.0301	0.1183	0.0179	0.0042	0.0267
MIXBHIGH	0.0108	0.0204	9.8523	9.9588	0.0863	10.0757	49.3322	9.7977	9.9197	9.7368	0.0064	1.8983	4.8938	4.9655
MIXCHIGH	-0.0877	-0.2282	0.0039	0.003	0.0276	-0.0019	0.0254	0.0011	-0.0233	0.0133	49.7547	0.0031	0.0041	-0.0053
ICV	23.7293	25.2439	0.5025	0.4981	23.3633	0.5049	2.515	0.5004	0.5037	0.4988	2.6144	0.2498	0.5133	0.5182
ICB	-0.1141	0.0038	-0.0002	-0.0006	0.0458	-0.0012	-0.0037	-0.0012	-0.001	-0.0014	-0.0029	-0.0011	0.0025	0.001
CRI	3.8434	5.2248	0.032	0.0217	4.0319	0.0841	0.1971	0.0071	0.0111	0.0051	0.275	0.1256	0.0137	0.0135
ICSA	-0.2192	270.2143	0.0035	-0.0015	0.0737	0.0002	0.0152	-0.0038	0.0116	-0.0115	0.0363	0.0028	0.0034	0.0139
ICSAB	-0.191	261.0681	0.4867	0.9597	0.0327	0.9549	0.9875	0.0455	0.06	0.0382	1.0643	0.5922	0.052	0.0567
CCV	48.8943	49.1006	0.9605	0.9685	47.7418	0.9796	4.8839	0.9633	0.9725	0.9587	5.0402	0.485	0.983	0.9984
CCB	-0.0849	-0.0129	-0.0006	-0.0012	0.0238	-0.0019	-0.0104	-0.0008	-0.0003	-0.0011	-0.0103	0.0005	0.0029	0.0043
F130301-1MB	-0.1367	-0.0464	-0.0011	-0.0024	-0.0036	-0.0028	-0.0174	-0.0021	-0.0008	-0.0028	-0.0159	0.0043	-0.0007	-0.0037
IP130307-2MB	-0.1689	-0.0407	-0.0009	-0.0032	0.0025	-0.0015	0	-0.0017	-0.0021	-0.0015	-0.0122	-0.001	-0.0006	-0.0035
IP130307-2LCS	36.1515	37.3139	0.475	0.962	35.0686	0.4878	0.0052	0.4645	0.4689	0.4623	-0.0215	0.4653	1.7015	1.7364
IP130307-3MB	-0.1314	-0.0296	-0.0008	-0.0013	0.0197	-0.0017	0.0045	-0.0024	-0.0025	-0.0023	-0.0122	-0.0008	0.0012	-0.0056
IP130307-3LCS	36.8429	38.0681	0.4843	0.9778	35.45	0.4979	0.0081	0.4763	0.4825	0.4732	-0.0234	0.4754	1.7184	1.7498
IP130307-4MB	-0.1579	-0.0335	-0.0004	-0.0012	0.0055	-0.0007	-0.0029	0	-0.0025	0.0012	-0.0085	-0.0045	-0.0009	-0.0066
IP130307-4LCS	36.0555	37.6412	0.4822	0.9756	35.5067	0.4925	0.0036	0.4745	0.479	0.4723	-0.0141	0.4662	1.6699	1.702
1303058-1	37.5781	28.0286	3.0461	0.0083	0.6156	0.1031	3.7354	0.1455	0.1525	0.1421	6.2593	0.003	0.0823	0.0784
1303058-1D	37.8798	27.9855	3.0411	0.0069	0.5764	0.102	3.7032	0.1485	0.1438	0.1508	6.8853	0.001	0.0826	0.0701
1303058-1L 5X	6.2587	5.7592	0.6293	0.0012	0.1129	0.021	0.7562	0.0289	0.0312	0.0277	1.2977	-0.0002	0.0148	0.0175
CCV	49.2866	49.4491	0.9655	0.983	48.3168	1.0053	4.9265	0.9665	0.9834	0.9581	5.0776	0.4968	0.9902	1.0198
CCB	-0.1249	-0.0123	-0.0006	-0.0004	0.0235	-0.001	-0.0154	-0.0002	-0.0029	0.0011	-0.0103	-0.0019	0.0022	-0.0029
1303058-1MS	81.906	68.4004	3.2797	0.8685	40.522	0.6017	3.5825	0.6078	0.6304	0.5966	6.2631	0.2964	1.7805	1.8262
1303058-1MSD	80.0894	67.0415	3.274	0.8458	39.5028	0.59	3.5007	0.5988	0.6157	0.5904	6.3867	0.2863	1.7295	1.7638
1303058-2	15.8604	18.0164	1.6236	0.0045	0.246	0.0596	2.1787	0.0941	0.097	0.0926	6.8309	0.0012	0.0842	0.0853
1303058-3	18.2743	25.5287	1.8551	0.0021	0.2875	0.0721	2.7156	0.0893	0.0944	0.0867	5.3603	0.0026	0.081	0.0782
1303058-4	25.9187	25.9086	2.1547	0.0045	0.573	0.0817	3.3496	0.1256	0.1336	0.1216	12.6029	0.0056	0.1729	0.1693
1303058-5	17.2715	21.6616	2.0721	0.0053	0.2825	0.0701	3.3816	0.1204	0.1289	0.1161	15.8328	0.0044	0.2777	0.2864
1303058-6	15.512	16.5445	1.7325	0.0063	0.3433	0.059	2.5805	0.1517	0.1594	0.1479	15.4612	0.0053	0.3009	0.309
1303058-7	13.3153	18.3993	1.5179	0.0047	0.3612	0.0623	2.058	0.0916	0.1043	0.0852	8.5677	0.0071	0.124	0.1289
1303058-8	15.1111	18.9945	1.6083	0.0017	0.2354	0.0668	2.2348	0.0857	0.0925	0.0823	6.5085	0.0044	0.1528	0.1512
1303058-9	6.1632	7.3191	5.4303	0.2461	0.1607	0.0226	1.3606	0.2146	0.2144	0.2147	18.7903	0.0011	0.2134	0.2195
CCV	48.8478	48.1096	0.9374	0.9622	48.0199	0.998	4.761	0.937	0.956	0.9275	4.8811	0.4876	0.9575	0.99
CCB	-0.106	0.001	-0.0002	-0.0003	0.0323	-0.0009	-0.0125	0.0009	-0.0012	0.002	-0.0122	-0.0017	0.0039	0.0064
1303058-10	4.1216	5.0216	5.7046	0.3294	0.1549	0.0141	1.2205	0.1999	0.1988	0.2004	25.2767	0.0011	0.2643	0.2754
1303058-11	12.0053	17.9699	2.0094	0.0037	0.1894	0.0551	2.0834	0.0761	0.0835	0.0725	5.9165	0.0008	0.1157	0.1111
1303058-12	7.0064	17.17	1.3099	0.0031	0.126	0.0416	2.4509	0.0738	0.0792	0.0712	1.7887	0.0016	0.0312	0.0292
1303058-13	14.5857	19.9895	1.5042	0.0017	0.2981	0.0599	2.0137	0.0859	0.094	0.0818	1.8223	0.004	0.0091	0.0098

Sample Id1	K	Mg	Mn	Mo	Na	Ni	P	Pb	Pb I	Pb II	S	Sb	Se	Se I
1303058-14	14.5883	13.7881	2.3317	0.004	0.3768	0.0651	3.005	0.0945	0.1018	0.0909	3.0331	0.0029	0.011	0.0101
1303059-1	10.4432	9.0826	0.8717	1.3521	0.7954	0.0195	2.0687	0.0951	0.1038	0.0908	37.1054	0.003	0.4214	0.4398
1303059-1D	10.6465	9.0078	0.9088	1.2797	0.7928	0.0194	2.0643	0.0937	0.0984	0.0914	34.6886	-0.0035	0.3787	0.387
1303059-1L 5X	1.6515	1.8583	0.1804	0.2779	0.1394	0.0034	0.4145	0.0177	0.0178	0.0177	7.5658	-0.0015	0.0905	0.0971
1303059-1MS	52.5183	48.3715	1.3385	2.3244	39.6972	0.5249	2.018	0.5451	0.5741	0.5307	36.5042	0.3118	2.0407	2.1183
1303059-1MSD	54.234	47.8372	1.5483	2.2716	40.6022	0.5119	2.15	0.5424	0.5629	0.5321	34.0291	0.2978	2.0516	2.119
CCV	49.1164	48.3954	0.9386	0.9699	48.2525	1.0201	4.7684	0.9372	0.9637	0.9239	4.896	0.4926	0.9663	0.9973
CCB	-0.1696	-0.0017	-0.0004	-0.0006	0.0168	0	-0.0096	-0.001	0.0036	-0.0033	-0.0159	0.0004	-0.0023	0.001
CCV	49.2505	47.5364	0.951	0.9616	48.4754	1.0054	4.8026	0.9332	0.9664	0.9167	4.8567	0.4924	0.9629	0.9877
CCB	-0.149	-0.0126	-0.0003	0.0001	0.0219	-0.0007	-0.0139	0.0006	-0.0003	0.001	-0.0103	-0.002	0.0006	-0.0031
1303059-2	4.2074	6.1012	0.6407	0.0207	0.0809	0.0165	1.2802	0.028	0.0324	0.0258	0.7564	0.0035	0.0255	0.0258
ZZZ	7.6994	6.2756	0.7253	8.0311	0.3398	0.0119	1.6421	0.7643	0.7877	0.7526	27.8355	-0.0277	0.599	0.619
ZZZ	7.4275	6.6461	0.8106	7.1061	0.2578	0.0151	1.6613	0.5779	0.5962	0.5687	25.2995	-0.0205	0.5284	0.5444
CCV	49.008	47.4656	0.9505	0.9675	48.3573	1.0051	4.7881	0.929	0.9646	0.9112	4.8361	0.4832	0.9509	0.9836
CCB	-0.1308	-0.0037	-0.0003	0.0015	0.0236	-0.0007	-0.0097	0.0001	-0.001	0.0006	-0.0141	0.0012	-0.0005	-0.0024
1303059-3	7.7815	6.4938	0.7486	8.2953	0.345	0.0132	1.6694	0.7972	0.8183	0.7866	28.1781	-0.0056	0.6046	0.6268
1303059-4	7.5461	6.9391	0.8422	7.389	0.2631	0.0158	1.6908	0.6052	0.6243	0.5956	25.8656	-0.0026	0.5412	0.5631
1303059-5	3.9784	6.1614	0.8103	0.05	0.1169	0.0176	1.197	0.0592	0.0618	0.0579	3.4817	0.0126	0.2221	0.222
1303059-6	4.8436	9.8145	1.4161	2.1958	0.1903	0.0252	1.6692	0.0916	0.0976	0.0886	9.9853	0.005	0.4571	0.468
1303059-7	8.1789	10.6765	1.2108	0.187	0.1354	0.0204	2.0305	0.0997	0.1028	0.0981	8.5132	0.0127	0.3169	0.3229
1303059-8	5.6068	6.7838	0.8267	0.4675	0.1533	0.0166	1.7201	0.1824	0.1695	0.1889	8.9374	0.0076	0.3596	0.3634
1303059-9	5.0744	6.5713	0.7667	0.0739	0.093	0.0155	1.4669	0.046	0.0478	0.0452	2.2912	0.0069	0.1023	0.0992
1303059-10	5.6921	10.4181	0.9226	0.0653	0.2407	0.0322	1.4467	0.0496	0.0521	0.0484	3.8875	0.0068	0.1345	0.139
1303059-11	3.9292	6.7157	0.8011	0.0919	0.1212	0.0184	1.4558	0.068	0.0714	0.0663	4.0428	0.0059	0.2373	0.2422
CCV	49.3122	48.9562	0.9779	0.9946	48.7194	1.0299	4.8207	0.9747	0.9963	0.9639	4.8998	0.498	0.9806	1.0054
CCB	-0.1193	0.0002	-0.0002	0	0.0307	-0.001	-0.0125	0.0011	0.0012	0.0011	-0.001	0.0068	0.0009	-0.0047
1303059-12	6.4217	7.7621	1.0942	0.0009	0.1136	0.0284	1.7153	0.0456	0.0468	0.045	0.8031	0.0051	0.0021	-0.0026
1303059-13	19.1558	61.0082	1.8968	0.0038	0.5906	0.0813	4.5753	0.1019	0.1088	0.0985	2.4089	0.0084	0.0097	0.0038
1303059-14	1.0658	2.1648	0.3583	0.0005	0.0459	0.0091	0.444	0.0139	0.0128	0.0145	0.1333	0.0027	-0.0003	-0.0101
1303059-15	1.5815	1.8153	0.4902	0.0009	0.0453	0.0075	0.5497	0.0126	0.0104	0.0137	0.1109	0.0039	0.0036	-0.0019
1303060-1	20.0605	40.5108	1.956	0.0119	0.5973	0.0895	3.6714	0.1068	0.1128	0.1038	4.4188	0.0094	0.0244	0.0171
1303060-1D	19.875	40.0089	1.8967	0.0115	0.5964	0.0891	3.7156	0.1047	0.113	0.1006	4.3926	0.009	0.0189	0.0086
1303060-1L 5X	3.3042	8.6584	0.4209	0.0016	0.1053	0.0183	0.7851	0.0213	0.0216	0.0212	0.9318	0.0045	0.0096	0.012
1303060-1MS	62.2296	81.1643	2.3596	0.923	40.4874	0.5993	3.701	0.5937	0.6238	0.5787	4.8212	0.3064	1.6868	1.7384
1303060-1MSD	61.9432	80.4499	2.3662	0.9028	39.8265	0.5882	3.6786	0.5682	0.5929	0.5559	4.387	0.2966	1.6615	1.6914
1303060-2	15.3765	23.0236	1.8541	0.3741	0.4173	0.0436	2.8548	0.2876	0.3003	0.2813	34.767	0.0115	0.8569	0.8706
CCV	49.4837	49.1494	0.9806	1.0023	48.826	1.0272	4.6712	0.973	1.0035	0.9578	4.8043	0.4957	0.9687	0.9966
CCB	-0.1031	0.0084	0	0.001	0.0367	-0.0004	-0.0139	0.0008	0.0001	0.0012	-0.0178	0.0042	0.0006	0.0014

Sample Id1	K	Mg	Mn	Mo	Na	Ni	P	Pb	Pb I	Pb II	S	Sb	Se	Se I
1303060-3	14.2395	24.5768	1.6283	0.0404	0.4025	0.0546	3.0411	0.2313	0.247	0.2235	18.0229	0.0075	0.3235	0.3335
1303060-4	14.7939	26.4662	3.5059	0.4899	0.5112	0.0489	2.6687	0.1734	0.1838	0.1682	20.4985	0.0058	0.4342	0.4396
1303060-5	18.0316	26.0853	1.9092	0.2444	0.4099	0.051	3.0555	0.2667	0.2831	0.2585	32.8849	0.0097	0.8264	0.8454
1303060-6	26.0211	33.3573	2.2498	0.0741	0.9221	0.087	3.6986	0.1708	0.1894	0.1615	11.506	0.0124	0.1544	0.1522
1303060-7	18.0231	24.4837	1.9898	0.1335	0.4643	0.06	3.5817	0.2045	0.216	0.1988	19.4522	0.0069	0.4741	0.4865
1303060-8	18.3394	24.836	2.0381	0.1261	0.4468	0.0567	3.5289	0.228	0.2381	0.2229	19.4446	0.0085	0.4654	0.4767
1303060-9	7.6444	17.6876	1.6554	0.0267	0.2588	0.0284	2.2174	0.1116	0.1205	0.1072	7.3333	0.0067	0.5254	0.5366
1303060-10	20.1175	26.9617	2.1188	0.1276	0.4479	0.047	3.1459	0.2041	0.2197	0.1963	22.2979	0.008	0.3549	0.3628
1303060-11	26.7284	35.4138	2.0781	0.1445	3.199	0.0922	3.3756	0.1706	0.1854	0.1631	27.7956	0.0112	0.2438	0.2434
1303060-12	8.4138	37.4524	1.1889	0.0019	0.4346	0.0542	2.4028	0.0573	0.0605	0.0557	2.082	0.009	0.0027	0.0008
CCV	49.6959	49.6413	0.9872	1.0115	49.0873	1.0485	4.7096	0.979	1.012	0.9626	4.8885	0.5043	0.9829	1.0164
CCB	-0.1199	0.0188	0.0003	0.0016	0.0381	0.0004	-0.0103	0.0004	0.0025	-0.0007	-0.0178	0.0071	0.0024	0.0028
ZZZ	3.0878	5.5662	1.7026	0.0014	0.0878	0.0099	0.5751	0.0228	0.0225	0.0229	1.841	0.0036	0.0337	0.035
ZZZ	3.0366	5.4766	0.4701	0.0012	0.1324	0.0136	0.5985	0.0304	0.0327	0.0293	2.749	0.0072	0.0388	0.042
ZZZ	3.0771	5.5672	1.1933	0.0014	0.1233	0.0125	0.5989	0.0281	0.0314	0.0264	2.2314	0.007	0.036	0.0374
1303057-1 5X	3.1115	5.5851	1.6461	-0.001	0.0656	0.0101	0.5732	0.0211	0.023	0.0201	1.884	0.0008	0.0331	0.0337
1303057-1D 5X	2.9885	5.3126	0.44	0.0009	0.1278	0.0123	0.5763	0.0277	0.0336	0.0248	2.6873	-0.0016	0.0386	0.0342
1303057-1L 25X	0.424	1.1128	0.3383	-0.0014	0.0296	-0.0005	0.1057	0.0041	0.0036	0.0044	0.3758	-0.0013	0.0071	0.0043
1303057-1MS 5X	10.6658	13.1415	0.5512	0.1858	7.0731	0.1197	0.4268	0.1198	0.1258	0.1168	2.1903	0.0669	0.4168	0.4351
1303057-1MSD 5X	10.7725	13.8233	0.5469	0.1868	7.0778	0.1223	0.4931	0.1209	0.1289	0.1169	2.5528	0.0684	0.3994	0.415
ZZZ	49.5519	48.203	0.9281	0.963	48.8517	1.0378	4.5879	0.9202	0.9598	0.9004	4.8754	0.4969	0.9523	1.0051
CCV	49.0914	50.4303	0.9853	0.9795	48.6055	0.973	4.9018	0.9849	0.993	0.9809	5.248	0.4832	1.0124	1.0266
CCB	-0.0997	0.0325	0.0007	-0.0008	0.0502	-0.0008	-0.0071	-0.0009	0.0007	-0.0017	0.0008	0.0001	0.0029	0.0019
1303058-1 5X	6.1713	5.8684	0.6389	0.001	0.1072	0.0196	0.7498	0.0277	0.0372	0.023	1.3555	0.0021	0.0133	0.0119
1303058-1D 5X	6.2161	5.8919	0.6432	0.0002	0.1	0.0193	0.748	0.0285	0.0301	0.0277	1.434	-0.0038	0.0164	0.0157
1303058-1L 25X	0.9796	1.14	0.1281	-0.0025	0.026	0.0016	0.1373	0.0041	0.0026	0.0048	0.2564	-0.001	0.0037	-0.0029
1303058-1MS 5X	14.2314	14.3046	0.6976	0.1745	7.0227	0.1194	0.7307	0.1277	0.13	0.1266	1.3238	0.0567	0.3818	0.3852
1303058-1MSD 5X	13.9923	14.3125	0.7067	0.175	6.8952	0.12	0.7249	0.1281	0.1333	0.1256	1.3798	0.0583	0.3804	0.3817
CCV	49.0697	50.377	0.9843	0.9809	48.6229	0.9711	4.9029	0.9744	0.9895	0.9669	5.2049	0.4826	1.0029	1.0335
CCB	-0.0986	0.0431	0.001	-0.0004	0.0522	-0.0004	-0.0015	-0.0004	0.0025	-0.0019	0.0008	-0.0014	0.0023	0.0036
1303058-1A	77.4022	66.8591	3.375	0.9298	41.0119	0.5538	3.5565	0.5897	0.6038	0.5826	6.3268	0.4526	1.7995	1.8423
1303058-1A 5X	6.2735	5.9088	1.1209	0.9357	0.1165	0.4995	0.7672	0.4989	0.5066	0.495	1.3387	0.4528	1.8188	1.8495
1303059-1A	50.552	47.8909	1.2898	2.1631	39.6656	0.4545	2.0287	0.5263	0.5358	0.5215	37.6054	0.4332	2.0768	2.1238
1303060-1A	56.2775	74.7373	2.257	0.843	36.5835	0.4888	3.6496	0.5047	0.515	0.4996	4.5161	0.4043	1.5375	1.5614
1303058-2 5X	2.5426	3.7967	0.3423	0.0001	0.0687	0.0104	0.4377	0.0173	0.0196	0.0161	1.4302	0.0001	0.0192	0.0162
1303058-3 5X	2.9202	5.3824	0.3948	-0.0006	0.0628	0.0134	0.538	0.0182	0.0188	0.0179	1.1315	0.0003	0.0182	0.0184
1303058-4 5X	4.2211	5.5628	0.4664	-0.001	0.1043	0.0148	0.6901	0.0265	0.0297	0.0249	2.706	0.0017	0.0392	0.0416
1303058-5 5X	2.7354	4.5783	0.4416	-0.0003	0.0538	0.0122	0.6918	0.0245	0.0242	0.0247	3.3565	0.0024	0.0592	0.0596

Sample Id1	K	Mg	Mn	Mo	Na	Ni	P	Pb	Pb I	Pb II	S	Sb	Se	Se I
1303058-6 5X	2.5525	3.5762	0.3778	0.0003	0.079	0.01	0.5337	0.0327	0.0348	0.0317	3.3452	-0.0023	0.0688	0.0704
1303058-7 5X	2.1065	3.9298	0.3275	-0.0013	0.0685	0.0113	0.4274	0.0186	0.019	0.0183	1.8466	-0.0026	0.0259	0.0242
CCV	48.9387	50.2695	0.9815	0.9802	48.5115	0.9733	4.8734	0.9787	0.989	0.9736	5.2611	0.4852	1.002	1.0005
CCB	-0.0663	0.0395	0.0009	0.0001	0.0524	-0.0012	-0.0042	0.0007	-0.0002	0.0011	-0.0066	-0.0017	0.0055	0.0062
1303058-8 5X	2.4386	4.0247	0.3444	-0.0013	0.0568	0.0104	0.4522	0.0171	0.0177	0.0169	1.3294	0.0014	0.0337	0.0313
1303058-9 5X	0.9344	1.5709	1.194	0.0495	0.0406	0.0027	0.2794	0.0451	0.046	0.0446	4.0222	0.0007	0.0464	0.0425
1303058-10 5X	0.6069	1.1196	1.3004	0.0719	0.0322	0.0034	0.2593	0.0437	0.0526	0.0392	5.6206	0.0027	0.0625	0.0754
1303058-11 5X	1.9125	3.8926	0.4409	-0.0014	0.0432	0.0092	0.4457	0.0147	0.0148	0.0147	1.2902	-0.0004	0.026	0.0264
1303058-12 5X	1.0697	3.6563	0.2829	-0.001	0.0286	0.007	0.5099	0.0136	0.0165	0.0122	0.3739	0.0003	0.0051	0.0041
1303058-13 5X	2.2979	4.2471	0.3232	-0.0014	0.0582	0.0106	0.4115	0.0169	0.0184	0.0161	0.3851	0.0008	0.0001	-0.0012
1303058-14 5X	2.3731	2.9683	0.5072	-0.0004	0.0686	0.0127	0.6219	0.019	0.0258	0.0156	0.6463	0.002	0.0035	0.0061
1303059-5 5X	0.6628	1.2663	0.166	0.0082	0.1068	0.0021	0.2313	0.0104	0.0117	0.0097	0.7415	-0.0013	0.0475	0.0432
1303059-7 5X	1.3138	2.23	0.2491	0.0347	0.0292	0.0033	0.408	0.0192	0.0256	0.0161	1.8298	0.0019	0.0685	0.0719
1303059-9 5X	0.8117	1.3505	0.1572	0.0127	0.0253	0.0011	0.2958	0.0072	0.0069	0.0074	0.4896	0.0003	0.0224	0.019
CCV	48.1122	49.0907	0.959	0.9539	47.6826	0.9452	4.7609	0.9523	0.966	0.9454	5.0851	0.4674	0.9725	0.9898
CCB	-0.1226	-0.0221	-0.0005	-0.001	0.0135	-0.0017	-0.0127	-0.0018	-0.0029	-0.0013	-0.0234	-0.0007	0.0025	0.0031
1303059-11 5X	0.5607	1.3608	0.1616	0.0169	0.0252	0.0021	0.2893	0.0121	0.0152	0.0105	0.8572	-0.0013	0.0502	0.0477
1303059-12 5X	1.0419	1.6537	0.2312	-0.0019	0.0509	0.0039	0.3513	0.0078	0.0099	0.0067	0.1762	0.0009	0.0016	0.0012
1303059-13 5X	3.1244	13.1088	0.409	-0.0016	0.1157	0.0151	0.9871	0.0195	0.0211	0.0187	0.5344	-0.0012	0.0027	0.0041
1303059-14 5X	0.1119	0.4506	0.0762	-0.0021	0.016	-0.0004	0.0927	0.0002	-0.0003	0.0005	0.0158	-0.0007	-0.0014	-0.0076
1303060-9 5X	1.257	3.9222	0.3604	0.0038	0.0647	0.004	0.5038	0.0232	0.0234	0.0231	1.7178	0.0013	0.1205	0.1191
1303060-10 5X	3.7159	6.1184	0.4734	0.0256	0.122	0.0083	0.7098	0.0445	0.0428	0.0453	5.3172	-0.0023	0.0853	0.0842
1303060-1 5X	3.3361	8.886	0.4219	0.0005	0.1039	0.0168	0.8055	0.0211	0.0224	0.0205	1.0046	0.0004	0.0064	0.0011
1303060-1D 5X	3.2897	8.6721	0.4058	0.0006	0.1012	0.0164	0.8054	0.0206	0.0246	0.0185	0.9691	-0.0026	0.0048	0.0063
1303060-1L 25X	0.4871	1.745	0.0848	-0.0022	0.0272	0.0013	0.1465	0.0019	-0.0027	0.0042	0.1911	-0.0049	0.0028	-0.0033
1303060-1MS 5X	11.0549	17.6039	0.5102	0.1898	7.2528	0.1212	0.8144	0.1266	0.1299	0.125	1.1091	0.0594	0.3886	0.3936
CCV	48.5554	49.9929	0.9756	0.9733	48.1335	0.9637	4.8636	0.977	0.9853	0.9729	5.2124	0.4758	0.9973	1.0125
CCB	-0.1272	-0.0204	-0.0006	-0.0025	0.0108	-0.0011	-0.0089	-0.0018	0.0003	-0.0028	-0.0178	-0.0037	0.0002	-0.0061
1303060-1MSD 5X	11.1828	17.814	0.5216	0.1883	7.275	0.1213	0.8217	0.1239	0.1262	0.1227	1.0233	0.0607	0.3866	0.3889
1303060-2 5X	2.5128	5.0118	0.3961	0.076	0.0866	0.008	0.6303	0.0589	0.0655	0.0556	7.986	-0.0003	0.1935	0.2012
1303060-3 5X	2.3402	5.2982	0.3456	0.0056	0.0756	0.0088	0.6599	0.0473	0.0477	0.0472	4.1083	-0.0009	0.0707	0.068
1303060-4 5X	2.2946	5.5862	0.7299	0.0954	0.0883	0.0075	0.5603	0.0346	0.036	0.0339	4.4263	-0.0002	0.0967	0.0919
1303060-5 5X	2.9276	5.4587	0.3945	0.0469	0.0744	0.0082	0.6395	0.0548	0.0538	0.0553	7.2264	-0.0007	0.1802	0.1772
1303060-6 5X	4.4043	7.2272	0.4808	0.0118	0.1612	0.0152	0.7991	0.0349	0.0343	0.0352	2.6051	-0.0018	0.0352	0.0308
1303060-7 5X	2.9921	5.3864	0.4309	0.0258	0.0908	0.01	0.7813	0.0434	0.0437	0.0432	4.4431	-0.0027	0.1065	0.1073
1303060-8 5X	3.1222	5.4961	0.4435	0.025	0.1058	0.0101	0.7808	0.0475	0.0501	0.0462	4.5068	-0.0008	0.11	0.1132
1303060-11 5X	4.5522	7.7797	0.4493	0.0282	0.5859	0.017	0.7387	0.0344	0.036	0.0335	6.4467	-0.0029	0.0562	0.0547
1303060-12 5X	1.365	8.3649	0.2615	-0.0014	0.097	0.0105	0.5289	0.0101	0.0171	0.0066	0.4746	0.0042	-0.0022	0

Sample Id1	K	Mg	Mn	Mo	Na	Ni	P	Pb	Pb I	Pb II	S	Sb	Se	Se I
CCV	48.5011	49.9984	0.9751	0.9758	48.128	0.967	4.7586	0.9785	0.9854	0.9751	5.1581	0.478	1.0045	1.0227
CCB	-0.1183	-0.0194	-0.0005	-0.0012	0.0145	-0.0019	-0.0111	-0.0003	0.0005	-0.0006	-0.0066	-0.0013	-0.0009	-0.0049
1303057-2 5X	1.642	4.5946	0.4156	0.0007	0.0604	0.0049	0.566	0.0296	0.0306	0.0291	2.8985	-0.0032	0.091	0.0914
1303057-3 5X	1.9317	3.6056	0.363	0.0027	0.0519	0.004	0.5462	0.0268	0.0282	0.0261	4.3477	-0.0003	0.0808	0.0822
1303057-4 5X	0.9826	2.321	0.4046	0.0002	0.0371	0.0009	0.3699	0.023	0.0223	0.0234	1.8616	-0.0046	0.0806	0.08
1303057-5 5X	0.7399	2.2237	0.4221	0.001	0.0675	0.0009	0.3384	0.0228	0.0248	0.0218	1.6431	-0.0014	0.1458	0.1456
1303057-6 5X	0.7257	1.576	0.3094	0.0074	0.0336	0.0004	0.3818	0.0311	0.0305	0.0315	5.497	0.0006	0.0765	0.0755
1303057-7 5X	0.7512	2.0904	0.37	0.0016	0.036	0.0013	0.4478	0.0296	0.035	0.0269	4.7238	0.0004	0.1416	0.1508
1303057-8 5X	1.6208	4.0293	0.4849	0.0002	0.0551	0.0062	0.4821	0.0386	0.0378	0.039	12.3601	0.0004	0.137	0.1356
1303057-10 5X	0.3089	1.0708	0.328	0.0694	0.0369	0.0005	0.2175	0.0242	0.0269	0.0229	3.1807	-0.002	0.2736	0.2761
1303057-11 5X	0.3025	0.9445	0.4104	0.0221	0.0309	-0.0003	0.2373	0.0229	0.0217	0.0236	3.1359	-0.0016	0.2604	0.2645
1303057-12 5X	5.2202	5.6583	0.4863	-0.0003	0.0892	0.018	0.5845	0.0235	0.0353	0.0176	0.9094	0.0035	0.0034	0.0097
CCV	48.611	49.8275	0.9724	0.9761	48.2163	0.9664	4.7588	0.9726	0.9752	0.9712	5.1787	0.4791	1.0016	1.0097
CCB	-0.1168	-0.0226	-0.0006	-0.0013	0.0133	-0.0018	-0.0126	0.0003	-0.002	0.0014	-0.0197	-0.0018	-0.0018	-0.0043
1303057-13 5X	4.2895	8.6228	0.4245	-0.0007	0.0828	0.0199	0.7085	0.0247	0.0273	0.0235	2.7583	0.0016	0.003	0.0032
1303057-14 5X	2.7362	12.8328	0.3786	-0.0009	0.0757	0.0138	0.8309	0.025	0.0292	0.0229	0.8385	-0.0017	0.0079	0.0101
1303057-15 5X	3.8568	4.8666	0.5816	-0.0004	0.1322	0.0159	0.8704	0.0231	0.0229	0.0231	0.7396	-0.0029	0.003	0.0031
CRI	3.7105	5.1269	0.0312	0.0207	3.9176	0.0804	0.1794	0.0053	0.008	0.004	0.2079	0.1161	0.013	0.0146
ICSA	-0.2136	266.0985	0.0038	-0.0005	0.0501	0.0003	0.0166	-0.0029	0.0211	-0.0148	0.0139	0.0045	-0.0005	0.0018
ICSAB	-0.1921	266.227	0.4931	0.9657	0.0177	0.9416	0.952	0.0442	0.0638	0.0343	1.0625	0.5786	0.05	0.0547
CCV	48.5516	50.3766	0.9805	0.9791	48.0824	0.9748	4.7902	0.9787	0.9931	0.9715	5.1993	0.4813	1.0058	1.0145
CCB	-0.1011	-0.004	-0.0004	-0.0009	0.0152	-0.0004	-0.0072	-0.0029	0.0076	-0.0081	-0.0122	0.0028	0.0029	0.0122

Sample Id1	Se II	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
MIXAHIGH	-0.0071	-0.0216	0.0021	-0.0016	0.0002	-0.0212	0.2382	-0.0021	-0.0044	0.0042
MIXBHIGH	4.858	49.3348	9.9456	9.9716	9.7738	4.9656	-0.0982	4.9363	9.8396	-0.0177
MIXCHIGH	0.0088	-0.0123	0.0191	-0.002	0.0058	-0.003	49.9141	-0.0068	-0.0008	4.9898
ICV	0.5108	2.532	0.5184	0.2522	0.2587	0.2514	2.5315	0.25	0.4948	0.502
ICB	0.0032	-0.0118	-0.0001	-0.0011	-0.0026	-0.0016	-0.0281	0.0002	-0.0018	0.0005
CRI	0.0137	0.1006	0.1058	0.0186	0.0196	0.0197	0.2011	0.1053	0.0395	0.0534
ICSA	-0.0019	-0.0093	0.0036	-0.0018	-0.0018	-0.0121	0.1078	-0.0028	-0.0037	0.0021
ICSAB	0.0497	0.9645	1.0183	0.9859	0.9787	0.0802	9.7124	0.481	0.9257	0.4829
CCV	0.9753	4.8289	1.0242	0.4978	0.4947	0.5129	4.8388	0.4815	0.9466	0.9628
CCB	0.0022	-0.016	0.0005	-0.003	-0.0027	-0.0048	-0.0345	-0.0006	-0.0011	0
F130301-1MB	0.0008	-0.0179	-0.0003	-0.0045	-0.0029	-0.0052	-0.0378	-0.0008	-0.0026	-0.0006
IP130307-2MB	0.0008	-0.0125	0.0005	-0.0044	-0.0032	-0.0028	-0.0303	-0.001	-0.0019	-0.0005
IP130307-2LCS	1.6841	1.0679	0.4962	0.4841	0.4885	1.8633	-0.0292	0.486	0.4703	-0.0003
IP130307-3MB	0.0045	-0.0094	-0.0014	-0.0043	-0.0029	-0.0025	-0.0248	0	-0.0012	-0.0003
IP130307-3LCS	1.7028	1.0876	0.5052	0.4919	0.4965	1.8957	-0.0224	0.4957	0.4824	-0.0006
IP130307-4MB	0.0019	-0.0036	-0.0015	-0.0023	-0.0032	-0.0047	-0.0326	-0.0005	-0.0005	-0.0005
IP130307-4LCS	1.6538	1.1224	0.5026	0.4928	0.4964	1.884	-0.0312	0.4946	0.4733	-0.0008
1303058-1	0.0842	15.6259	0.0067	0.5594	0.3168	-0.016	0.4911	0.4594	0.5165	0.0436
1303058-1D	0.0888	11.5585	0.003	0.5569	0.2955	-0.0239	0.4513	0.4517	0.5178	0.045
1303058-1L 5X	0.0134	3.2604	0.0022	0.113	0.0623	0.0008	0.0714	0.0929	0.1055	0.0084
CCV	0.9755	4.8643	1.0384	0.5066	0.4937	0.513	4.8624	0.4854	0.956	0.973
CCB	0.0047	-0.0077	-0.0045	-0.001	-0.0026	-0.0012	-0.0375	-0.0007	0.0001	0.0001
1303058-1MS	1.7576	11.1195	0.5129	1.0554	0.6319	1.892	0.4727	0.9636	0.9725	0.0414
1303058-1MSD	1.7124	10.5433	0.4948	1.0491	0.6277	1.8418	0.473	0.9443	0.9478	0.0395
1303058-2	0.0837	14.6511	0.0042	0.3549	0.211	-0.0138	0.6669	0.6114	0.2692	0.0262
1303058-3	0.0823	9.8142	0.0038	0.3884	0.259	-0.0191	0.4708	0.4736	0.2673	0.0288
1303058-4	0.1746	10.1605	0.0084	0.5653	0.2598	-0.0224	1.0236	1.0717	0.3814	0.0416
1303058-5	0.2733	7.2418	0.0031	0.2913	0.236	-0.0161	1.0398	0.9125	0.3152	0.0352
1303058-6	0.2969	6.4192	0.0066	0.3294	0.2733	-0.0223	2.9203	1.7965	0.3209	0.0212
1303058-7	0.1216	8.2047	0.0035	0.3971	0.1913	-0.0108	1.2482	0.9349	0.2687	0.0291
1303058-8	0.1536	9.2352	0.0059	0.302	0.2085	-0.0191	0.7919	0.7419	0.2588	0.0259
1303058-9	0.2103	11.4127	0.006	0.5338	0.1444	-0.0211	23.1208	0.9066	0.3844	0.0338
CCV	0.9412	4.7266	1.0149	0.4985	0.4752	0.4982	4.7693	0.4746	0.9209	0.9538
CCB	0.0027	-0.0067	0.001	-0.0009	-0.0026	-0.0041	-0.0213	-0.0002	0.0002	0.0002
1303058-10	0.2587	7.8896	0.0082	0.5477	0.0931	-0.0118	23.8374	0.8947	0.2678	0.0409
1303058-11	0.118	10.9338	0.0035	0.2525	0.2312	-0.0148	0.4069	0.411	0.2058	0.0236
1303058-12	0.0323	4.2977	-0.0008	0.209	0.1488	-0.014	0.0884	0.1053	0.206	0.0141
1303058-13	0.0087	10.5872	0.0046	0.4522	0.2266	-0.0177	0.1113	0.1042	0.2615	0.0252

Sample Id1	Se II	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
1303058-14	0.0114	11.0729	0.0002	0.2138	0.3724	-0.0181	0.1332	0.1492	0.2617	0.0361
1303059-1	0.4123	11.9472	0.0022	0.3678	0.1062	0.0105	1.4367	1.2227	0.1069	0.0228
1303059-1D	0.3745	9.5358	0.0018	0.378	0.1089	0.0098	1.2948	1.0715	0.106	0.0263
1303059-1L 5X	0.0872	2.4278	-0.0008	0.0729	0.0196	-0.0062	0.2562	0.2504	0.0218	0.0041
1303059-1MS	2.002	12.143	0.4989	0.8622	0.4292	1.9157	1.3156	1.896	0.5669	0.0387
1303059-1MSD	2.0179	12.7748	0.4938	0.9166	0.3892	1.8994	1.32	1.878	0.5502	0.0402
CCV	0.9508	4.7295	1.0337	0.5026	0.4716	0.5191	4.7667	0.4768	0.9211	0.9608
CCB	-0.0039	-0.01	-0.0019	-0.0014	-0.003	-0.0001	-0.0045	0.0004	-0.0012	0.0005
CCV	0.9504	4.6503	1.0182	0.4898	0.4684	0.5141	4.7726	0.4786	0.9368	0.9655
CCB	0.0025	-0.0041	-0.0006	-0.0015	-0.0027	-0.0043	-0.0341	-0.0001	-0.0006	0.0003
1303059-2	0.0253	8.0112	0.0009	0.0662	0.1411	-0.0051	0.1347	0.118	0.0774	0.0103
ZZZ	0.5891	7.6421	0.0126	0.2088	0.2374	-0.0056	42.9439	4.2376	0.0886	0.0541
ZZZ	0.5205	5.6788	0.0066	0.1972	0.2104	-0.0133	34.1676	3.4301	0.0969	0.0504
CCV	0.9346	4.6379	1.0116	0.4911	0.4672	0.5053	4.7647	0.4782	0.9341	0.9653
CCB	0.0004	-0.0042	-0.0023	-0.0014	-0.0026	-0.0061	-0.0255	-0.0003	-0.0004	0.0004
1303059-3	0.5936	7.7468	0.0159	0.2113	0.2402	0.004	43.4318	4.2866	0.0906	0.0551
1303059-4	0.5303	5.7986	0.0083	0.2009	0.2131	-0.0033	34.7305	3.4918	0.0985	0.0515
1303059-5	0.2221	5.5402	0.0014	0.0954	0.1628	-0.0105	0.465	0.7193	0.0855	0.0173
1303059-6	0.4517	8.7979	0.0043	0.1541	0.1307	-0.006	3.1338	1.0201	0.1302	0.0295
1303059-7	0.3138	9.7009	0.0005	0.1092	0.1656	-0.0104	0.9692	0.7322	0.1208	0.025
1303059-8	0.3577	10.377	0.0112	0.1231	0.1725	-0.0099	42.0181	1.5464	0.1229	0.025
1303059-9	0.1038	8.7352	0.0006	0.0972	0.1852	-0.0104	0.4399	0.5109	0.0878	0.0109
1303059-10	0.1323	7.8233	-0.0014	0.1053	0.2196	-0.0083	0.3758	0.446	0.0921	0.0088
1303059-11	0.2348	8.4034	0.0021	0.0825	0.3158	-0.0105	0.4248	0.7018	0.0918	0.0203
CCV	0.9682	4.7978	1.031	0.4997	0.4787	0.5148	4.8742	0.4927	0.962	0.9977
CCB	0.0037	0.0008	0.001	-0.0013	-0.0026	-0.0026	-0.0253	-0.0001	0.0007	0.0004
1303059-12	0.0044	11.5615	0.0007	0.0706	0.2509	-0.0124	0.0155	0.0647	0.1159	0.0188
1303059-13	0.0126	14.1532	0.0062	0.431	0.2252	-0.0149	0.135	0.1365	0.3714	0.0315
1303059-14	0.0047	5.8136	-0.0023	0.0191	0.1873	-0.0147	-0.0207	0.0277	0.0397	0.0092
1303059-15	0.0063	5.6928	-0.0007	0.0189	0.2015	-0.0075	-0.0119	0.0254	0.0403	0.0073
1303060-1	0.0281	17.7113	0.0034	0.5592	0.2669	-0.0193	0.2382	0.1816	0.39	0.0331
1303060-1D	0.024	15.7885	0.0047	0.5548	0.2695	-0.0203	0.2553	0.1836	0.3889	0.0344
1303060-1L 5X	0.0084	3.863	0	0.1157	0.0543	-0.0114	0.0156	0.0371	0.0852	0.0061
1303060-1MS	1.6611	18.1113	0.5044	1.0655	0.667	1.8924	0.2449	0.6913	0.869	0.0319
1303060-1MSD	1.6466	17.7337	0.496	1.0543	0.6508	1.8457	0.2395	0.6815	0.8932	0.0322
1303060-2	0.85	21.2067	0.0066	0.388	0.2205	-0.0232	6.1264	3.037	0.2372	0.0607
CCV	0.9547	4.7992	1.0291	0.4994	0.4809	0.5172	4.8983	0.4958	0.9695	0.9992
CCB	0.0001	0.0004	-0.0004	-0.0012	-0.0025	-0.007	-0.0196	0.0005	0.0008	0.0007

Sample Id1	Se II	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
1303060-3	0.3185	16.6738	0.0044	0.3874	0.2116	-0.0163	0.6134	1.2013	0.2874	0.0433
1303060-4	0.4316	15.7391	0.0037	0.5572	0.1994	-0.0128	1.4601	1.5509	0.2465	0.034
1303060-5	0.8169	16.1133	0.0052	0.4017	0.1908	-0.0189	3.3911	2.7584	0.3005	0.0554
1303060-6	0.1555	15.8462	0.0072	0.6365	0.2239	-0.0197	1.0543	0.8279	0.3941	0.0457
1303060-7	0.4679	16.9196	0.0016	0.4033	0.2477	-0.0149	2.1594	1.5566	0.2868	0.0342
1303060-8	0.4597	18.5685	0.0031	0.3623	0.2704	-0.0234	2.9874	1.8534	0.3633	0.0381
1303060-9	0.5198	14.4066	0.0036	0.3227	0.1717	-0.0193	1.3502	0.8642	0.2783	0.0254
1303060-10	0.3509	19.8821	0.006	0.5995	0.2714	-0.0196	1.3266	1.6493	0.4309	0.0411
1303060-11	0.244	18.5563	0.0064	0.7188	0.2414	-0.0158	1.3582	0.6591	0.4526	0.0466
1303060-12	0.0036	15.4	-0.0009	0.4963	0.2182	-0.0108	0.0805	0.0872	0.2058	0.0151
CCV	0.9662	4.8312	1.0472	0.502	0.4796	0.5173	4.905	0.4978	0.9791	1.0065
CCB	0.0023	0.0044	0.0003	-0.0011	-0.0027	-0.0006	-0.0052	0.001	0.0002	0.001
ZZZ	0.0331	5.2962	0.0042	0.3988	0.0686	-0.0066	0.1609	0.1421	0.0485	0.005
ZZZ	0.0372	4.2439	0.0006	0.0757	0.0724	-0.0696	0.2012	0.1772	0.0506	0.0066
ZZZ	0.0353	4.8708	0.0028	0.2645	0.0702	-0.0735	0.1927	0.1573	0.0494	0.0062
1303057-1 5X	0.0328	5.3953	0.0002	0.4033	0.0677	-0.0077	0.1553	0.1402	0.0464	0.0055
1303057-1D 5X	0.0408	4.2566	0.0013	0.0727	0.0697	-0.0063	0.2102	0.17	0.0461	0.0068
1303057-1L 25X	0.0085	1.0937	-0.0021	0.078	0.0116	-0.0068	0.0005	0.028	0.0081	0.0002
1303057-1MS 5X	0.4077	3.2488	0.1044	0.1507	0.1431	0.3952	0.1674	0.2926	0.1405	0.0082
1303057-1MSD 5X	0.3916	3.1761	0.1068	0.1536	0.1458	0.4058	0.1633	0.2806	0.1487	0.0082
ZZZ	0.9259	4.6725	1.0352	0.4967	0.458	0.5295	4.6872	0.4763	0.9152	0.961
CCV	1.0053	5.01	1.034	0.4955	0.5105	0.5103	4.9125	0.4912	1.0123	0.9763
CCB	0.0034	0.013	-0.0001	-0.003	-0.0022	0.0076	-0.0226	0.0004	0.0004	0.001
1303058-1 5X	0.014	3.3253	0.0017	0.1094	0.0639	0.0034	0.0996	0.0936	0.1102	0.0094
1303058-1D 5X	0.0167	2.468	-0.0009	0.1087	0.06	-0.0007	0.0756	0.0923	0.1122	0.0092
1303058-1L 25X	0.007	0.6697	-0.0027	0.0184	0.0106	-0.0004	-0.0205	0.0173	0.0315	0.001
1303058-1MS 5X	0.3801	2.3985	0.1016	0.2075	0.1321	0.378	0.063	0.1984	0.2193	0.008
1303058-1MSD 5X	0.3797	2.3162	0.102	0.2082	0.133	0.3829	0.066	0.1967	0.2167	0.008
CCV	0.9876	5.0019	1.0386	0.4953	0.51	0.5173	4.8918	0.4902	1.0104	0.9743
CCB	0.0016	0.0143	0.003	-0.0029	-0.002	0.0036	-0.0126	0.0006	0.0002	0.0012
1303058-1A	1.7781	16.4679	0.4911	0.9932	0.7796	1.7881	0.4674	0.9007	0.9792	0.0414
1303058-1A 5X	1.8035	4.9642	0.4888	0.5829	0.5479	1.8167	0.0754	0.5683	0.5974	0.0083
1303059-1A	2.0533	12.9234	0.463	0.7802	0.5601	1.7337	1.3542	1.6193	0.5522	0.0207
1303060-1A	1.5256	18.4215	0.4402	0.9407	0.6952	1.5935	0.2343	0.588	0.8008	0.0302
1303058-2 5X	0.0207	3.1132	-0.0005	0.0678	0.0428	0.0011	0.1112	0.1251	0.0582	0.0047
1303058-3 5X	0.0181	2.1029	0.0017	0.0744	0.0531	-0.0029	0.0596	0.0976	0.0829	0.0055
1303058-4 5X	0.0381	2.2124	0.0017	0.1113	0.0544	0.0004	0.1798	0.2243	0.0873	0.0086
1303058-5 5X	0.059	1.5527	-0.0022	0.0549	0.0484	0.0009	0.1915	0.1885	0.0693	0.0066

Sample Id1	Se II	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
1303058-6 5X	0.068	1.4231	0.0004	0.0639	0.0579	-0.0036	0.5923	0.381	0.0717	0.004
1303058-7 5X	0.0267	1.7958	-0.0025	0.0772	0.0393	-0.0033	0.2253	0.1956	0.0593	0.0052
CCV	1.0028	4.9946	1.0307	0.4953	0.5078	0.5058	4.8999	0.4897	1.0058	0.9736
CCB	0.0052	0.0139	-0.0041	-0.0029	-0.002	0.008	-0.0207	0.0007	-0.0002	0.0009
1303058-8 5X	0.035	1.9838	-0.0029	0.0568	0.0427	0.0004	0.1389	0.1534	0.0563	0.0049
1303058-9 5X	0.0483	2.5087	-0.0001	0.105	0.0301	-0.0001	4.8719	0.1935	0.0883	0.0068
1303058-10 5X	0.0561	1.8051	0.0045	0.1115	0.0195	0.0027	5.2078	0.1989	0.0642	0.0091
1303058-11 5X	0.0258	2.4178	0.0015	0.0483	0.0491	0.0013	0.0605	0.0868	0.0458	0.0045
1303058-12 5X	0.0057	0.939	-0.0036	0.0385	0.0303	-0.0019	-0.0003	0.0209	0.0456	0.0027
1303058-13 5X	0.0007	2.2982	0.0019	0.0869	0.0472	-0.0011	0.0062	0.0204	0.0584	0.0048
1303058-14 5X	0.0023	2.4322	0.0038	0.0399	0.0796	0.0053	0.0161	0.0306	0.0574	0.0075
1303059-5 5X	0.0496	1.1854	-0.002	0.0154	0.0329	0.0041	0.0735	0.1456	0.0175	0.003
1303059-7 5X	0.0668	2.0763	0.0021	0.0183	0.0332	0.0065	0.1884	0.1485	0.0247	0.0048
1303059-9 5X	0.0241	1.865	-0.0021	0.0157	0.0375	0.0013	0.0628	0.1028	0.0169	0.0017
CCV	0.9638	4.8664	1.0042	0.4779	0.4979	0.5038	4.78	0.4782	0.9845	0.9507
CCB	0.0022	0.004	0.001	-0.004	-0.0029	0.0006	-0.0236	-0.0003	-0.0022	-0.0001
1303059-11 5X	0.0514	1.7717	0.0008	0.0126	0.0648	0.001	0.0728	0.1396	0.0178	0.0038
1303059-12 5X	0.0018	2.5379	0.0019	0.0108	0.0537	0.0003	-0.012	0.013	0.0244	0.0035
1303059-13 5X	0.002	3.1566	0.001	0.0868	0.0484	-0.0038	0.0041	0.0274	0.0817	0.006
1303059-14 5X	0.0017	1.3225	-0.001	0.0002	0.0398	-0.0044	-0.0166	0.0053	0.0066	0.0015
1303060-9 5X	0.1212	3.3032	0.0012	0.0645	0.0369	-0.005	0.2524	0.1833	0.0623	0.0048
1303060-10 5X	0.0858	4.6217	0.0002	0.1251	0.0611	-0.003	0.2572	0.3586	0.1009	0.0083
1303060-1 5X	0.0091	4.704	-0.0029	0.1126	0.061	-0.0025	0.0255	0.0372	0.0868	0.0065
1303060-1D 5X	0.0041	3.5211	-0.0022	0.1107	0.0582	0.0015	0.0247	0.037	0.0865	0.0069
1303060-1L 25X	0.0058	0.8097	-0.0036	0.0189	0.0092	0.002	-0.0356	0.0064	0.0157	0.0001
1303060-1MS 5X	0.3861	4.0914	0.1075	0.2184	0.1486	0.3945	0.0189	0.1443	0.1962	0.0063
CCV	0.9897	4.9558	1.0285	0.485	0.5047	0.5084	4.8423	0.4863	1.006	0.9666
CCB	0.0034	0.0065	-0.0026	-0.004	-0.0026	-0.0006	-0.0248	-0.0002	-0.0013	-0.0002
1303060-1MSD 5X	0.3854	4.0879	0.1042	0.2211	0.1472	0.3996	0.0336	0.1455	0.2058	0.0068
1303060-2 5X	0.1896	4.7418	0.0022	0.0771	0.0467	0.0037	1.2819	0.6354	0.0511	0.0125
1303060-3 5X	0.0721	3.7035	-0.0012	0.0765	0.0449	-0.0009	0.0951	0.2483	0.0627	0.0084
1303060-4 5X	0.0991	3.4121	0.0006	0.1088	0.0412	-0.0027	0.2818	0.3144	0.0521	0.006
1303060-5 5X	0.1817	3.4843	-0.0025	0.0773	0.0393	-0.0019	0.6674	0.5571	0.0633	0.0104
1303060-6 5X	0.0374	3.5359	0.0008	0.1283	0.0482	0.0004	0.1912	0.1712	0.0862	0.0088
1303060-7 5X	0.1061	3.8135	-0.0003	0.0809	0.0543	-0.0039	0.4351	0.3283	0.0632	0.0065
1303060-8 5X	0.1084	4.2298	0.0022	0.0731	0.0598	-0.0032	0.6272	0.3943	0.0823	0.0077
1303060-11 5X	0.0569	4.2212	0.0024	0.148	0.0527	-0.0029	0.2564	0.1372	0.1018	0.0092
1303060-12 5X	-0.0034	3.5462	0.0024	0.1023	0.0481	0.0012	0.0167	0.0184	0.0467	0.0033

Sample Id1	Se II	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
CCV	0.9954	4.9525	1.0329	0.4872	0.5036	0.5021	4.853	0.4869	1.0064	0.9683
CCB	0.0011	0.0102	-0.0006	-0.004	-0.0028	0.0008	-0.0236	-0.0001	-0.002	0
1303057-2 5X	0.0908	3.659	-0.0009	0.0354	0.0342	-0.0031	0.3835	0.2645	0.0481	0.0058
1303057-3 5X	0.08	3.4528	-0.004	0.0467	0.0324	-0.0026	0.3291	0.2139	0.0366	0.0037
1303057-4 5X	0.0808	2.7865	-0.0012	0.0385	0.0205	-0.0018	0.1866	0.2411	0.0254	0.0048
1303057-5 5X	0.1459	2.7694	0.0026	0.061	0.018	0.0002	0.4456	0.4098	0.0218	0.0069
1303057-6 5X	0.077	2.5642	0.0008	0.0311	0.027	-0.0037	1.4045	0.6215	0.015	0.013
1303057-7 5X	0.1369	2.8037	-0.0005	0.0377	0.0307	0.002	1.2124	0.5915	0.0207	0.0112
1303057-8 5X	0.1378	3.9908	-0.0012	0.0554	0.0337	-0.0009	0.6579	0.4218	0.0557	0.0088
1303057-10 5X	0.2723	2.2005	0.0004	0.0283	0.023	-0.0047	1.528	0.7269	0.0142	0.0073
1303057-11 5X	0.2584	2.0768	0.0039	0.0322	0.0206	-0.0023	1.1871	0.7039	0.0106	0.0073
1303057-12 5X	0.0003	4.0976	0.0026	0.0535	0.0578	0.0049	0.0446	0.045	0.0813	0.0091
CCV	0.9976	4.9514	1.0276	0.4874	0.5026	0.508	4.8647	0.4845	1.0021	0.9681
CCB	-0.0005	0.0086	0.0001	-0.004	-0.0027	-0.0001	-0.0248	-0.0008	-0.0021	-0.0003
1303057-13 5X	0.0028	3.8875	-0.0001	0.0925	0.0466	-0.0003	0.0143	0.0426	0.0988	0.0082
1303057-14 5X	0.0068	4.6227	0.0022	0.1206	0.0621	-0.0031	0.0052	0.0384	0.0696	0.0072
1303057-15 5X	0.0029	5.127	-0.0044	0.0453	0.0916	-0.0002	-0.011	0.0352	0.0826	0.0068
CRI	0.0122	0.1139	0.1018	0.0174	0.0189	0.0239	0.1814	0.1033	0.0407	0.0516
ICSA	-0.0016	0.0084	0.0041	-0.002	-0.0013	-0.0001	0.1058	-0.0032	-0.0014	0.0021
ICSAB	0.0477	1.002	1.0252	0.9714	0.9951	0.1019	9.6899	0.4845	0.9792	0.4848
CCV	1.0014	4.9732	1.0373	0.487	0.5068	0.5109	4.8627	0.4894	1.0188	0.9719
CCB	-0.0017	0.0155	0.0023	-0.0039	-0.0026	0.0094	0.0143	0.0012	-0.001	0.001

Method : Paragon2 File : 130311A
 SampleId1 : BLANK SampleId2 :
 Analysis commenced : 3/11/2013 11:53:43
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:36
 [STD]
 Position : TUBE1

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	163.000	196.600	163.000	104.000	31.700	458.800	190.100	63.900	158.400
#2	162.100	196.600	166.200	104.200	31.600	457.200	191.500	63.900	156.000
Mean	162.550	196.600	164.600	104.100	31.650	458.000	190.800	63.900	157.200
%RSD	0.392	0.000	1.375	0.136	0.223	0.247	0.519	0.000	1.080
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	140.600	286.700	87.600	66.700	1024.100	162.600	163.600	16.500	78.800
#2	140.400	285.600	87.200	65.800	1016.800	161.700	163.700	16.400	77.200
Mean	140.500	286.150	87.400	66.250	1020.450	162.150	163.650	16.450	78.000
%RSD	0.101	0.272	0.324	0.961	0.506	0.392	0.043	0.430	1.450
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	187.900	291.500	77.200	2753.500	820.200	8.100	203.700	392.600	265.500
#2	187.600	289.300	77.200	2751.400	814.200	8.300	201.900	390.400	261.600
Mean	187.750	290.400	77.200	2752.450	817.200	8.200	202.800	391.500	263.550
%RSD	0.113	0.536	0.000	0.054	0.519	1.725	0.628	0.397	1.046
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	383.100	62.100	51.000	310.200	203.100	243.700	201.500	23.900	383.700
#2	382.800	61.900	50.800	307.600	201.500	240.900	198.700	23.600	381.800
Mean	382.950	62.000	50.900	308.900	202.300	242.300	200.100	23.750	382.750
%RSD	0.055	0.228	0.278	0.595	0.559	0.817	0.989	0.893	0.351
	Pb	Se							
	Reading	Reading							
#1									
#2									
Mean	0.000	0.000							
%RSD	0.000	0.000							

Method : Paragon2 File : 130311A
 SampleId1 : RL SampleId2 :
 Analysis commenced : 3/11/2013 11:55:33
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:36
 [STD]
 Position : TUBE2

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	172.700	235.300	169.900	217.700	40.800	601.500	198.300	246.600	173.200
#2	172.800	236.600	172.100	217.300	41.000	598.500	198.100	246.300	171.800
Mean	172.750	235.950	171.000	217.500	40.900	600.000	198.200	246.450	172.500
%RSD	0.041	0.390	0.910	0.130	0.346	0.354	0.071	0.086	0.574
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	149.500	309.000	92.200	147.800	1334.100	655.100	258.800	21.500	102.100
#2	149.400	309.900	92.800	147.300	1332.200	651.400	260.400	21.500	102.200
Mean	149.450	309.450	92.500	147.550	1333.150	653.250	259.600	21.500	102.150
%RSD	0.047	0.206	0.459	0.240	0.101	0.401	0.436	0.000	0.069
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	1663.200	336.300	107.000	2836.600	853.900	9.800	214.000	400.300	274.200
#2	1650.200	335.600	105.600	2846.900	847.700	9.700	216.900	394.100	273.800
Mean	1656.700	335.950	106.300	2841.750	850.800	9.750	215.450	397.200	274.000
%RSD	0.555	0.147	0.931	0.256	0.515	0.725	0.952	1.104	0.103
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	464.900	66.200	244.600	490.700	207.500	269.000	213.600	28.500	454.300
#2	463.100	65.800	243.400	492.100	210.900	269.100	215.300	28.600	455.100
Mean	464.000	66.000	244.000	491.400	209.200	269.050	214.450	28.550	454.700
%RSD	0.274	0.429	0.348	0.201	1.149	0.026	0.561	0.248	0.124
	Pb	Se							
	Reading	Reading							
#1									
#2									
Mean	0.000	0.000							
%RSD	0.000	0.000							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:05:36

SampleId1 : RL2

SampleId2 :

[STD]

Analysis commenced : 3/11/2013 11:57:22

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : TUBE3

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	184.600	305.700	183.700	432.400	56.500	865.400	209.400	576.500	196.400
#2	183.900	307.100	182.100	434.500	56.500	867.100	210.900	578.300	195.000
Mean	184.250	306.400	182.900	433.450	56.500	866.250	210.150	577.400	195.700
%RSD	0.269	0.323	0.619	0.343	0.000	0.139	0.505	0.220	0.506
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo

	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	162.600	338.200	98.900	303.000	1888.200	1593.000	441.200	30.300	144.500
#2	162.200	338.700	98.600	302.900	1889.000	1599.000	440.000	30.400	142.200
Mean	162.400	338.450	98.750	302.950	1888.600	1596.000	440.600	30.350	143.350
%RSD	0.174	0.104	0.215	0.023	0.030	0.266	0.193	0.233	1.135

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	4440.900	405.500	160.100	2904.800	881.600	13.200	230.500	412.400	287.800
#2	4472.200	401.300	157.100	2884.200	872.300	13.000	229.600	408.000	287.600
Mean	4456.550	403.400	158.600	2894.500	876.950	13.100	230.050	410.200	287.700
%RSD	0.497	0.736	1.338	0.503	0.750	1.080	0.277	0.758	0.049

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	605.000	72.900	549.400	814.200	222.100	310.400	232.600	37.200	582.700
#2	607.100	72.800	551.700	818.400	221.500	309.000	233.100	36.700	582.000
Mean	606.050	72.850	550.550	816.300	221.800	309.700	232.850	36.950	582.350
%RSD	0.245	0.097	0.295	0.364	0.191	0.320	0.152	0.957	0.085

	Pb	Se
	Reading	Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2 File : 130311A
SampleId1 : B3 **SampleId2 :**
Analysis commenced : 3/11/2013 11:59:11
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:36
[STD]

Position : TUBE4

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	212.600	199.000	215.200	299.700	353.100	1429.400	192.800	71.400	580.400
#2	212.400	199.500	212.300	299.100	353.000	1429.300	193.800	71.200	580.600
Mean	212.500	199.250	213.750	299.400	353.050	1429.350	193.300	71.300	580.500
%RSD	0.067	0.177	0.959	0.142	0.020	0.005	0.366	0.198	0.024

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	259.700	832.200	207.700	70.300	1041.900	166.300	167.700	192.200	257.400
#2	260.000	829.400	207.800	70.200	1038.400	166.000	167.300	191.800	257.900
Mean	259.850	830.800	207.750	70.250	1040.150	166.150	167.500	192.000	257.650
%RSD	0.082	0.238	0.034	0.101	0.238	0.128	0.169	0.147	0.137

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading

#1	205.200	858.500	305.000	3471.800	1198.100	8.100	223.700	432.400	321.200
#2	203.700	860.300	306.300	3464.500	1209.100	8.200	221.600	430.000	328.900
Mean	204.450	859.400	305.650	3468.150	1203.600	8.150	222.650	431.200	325.050
%RSD	0.519	0.148	0.301	0.149	0.646	0.868	0.667	0.394	1.675

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	948.600	91.700	1309.400	1704.700	253.100	249.000	387.700	89.700	400.000
#2	945.200	91.100	1309.500	1704.200	251.700	248.600	387.600	89.200	397.100
Mean	946.900	91.400	1309.450	1704.450	252.400	248.800	387.650	89.450	398.550
%RSD	0.254	0.464	0.005	0.021	0.392	0.114	0.018	0.395	0.515

	Pb	Se
	Reading	Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2 File : 130311A
SampleId1 : B2 **SampleId2 :**
Analysis commenced : 3/11/2013 12:01:01
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:36
[STD]

Position : TUBE5

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	618.700	204.900	636.100	1990.200	3166.900	9987.000	198.900	68.700	4254.300
#2	616.700	205.300	634.400	1987.300	3156.400	9973.300	198.200	69.200	4259.200
Mean	617.700	205.100	635.250	1988.750	3161.650	9980.150	198.550	68.950	4256.750
%RSD	0.229	0.138	0.189	0.103	0.235	0.097	0.249	0.513	0.081

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	1277.500	5568.900	1261.000	72.400	1024.200	163.100	164.900	1726.200	1823.500
#2	1272.900	5550.600	1255.900	72.100	1027.800	163.100	165.400	1723.900	1816.400
Mean	1275.200	5559.750	1258.450	72.250	1026.000	163.100	165.150	1725.050	1819.950
%RSD	0.255	0.233	0.287	0.294	0.248	0.000	0.214	0.094	0.276

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	208.900	5824.900	2299.900	9288.200	4457.500	8.400	385.900	763.000	839.700
#2	209.200	5823.600	2286.900	9303.200	4470.900	8.200	386.600	761.800	851.600
Mean	209.050	5824.250	2293.400	9295.700	4464.200	8.300	386.250	762.400	845.650
%RSD	0.101	0.016	0.401	0.114	0.212	1.704	0.128	0.111	0.995

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	5861.100	343.900	12419.400	13941.900	682.900	245.600	1999.000	661.000	396.200

#2	5835.700	345.000	12381.800	13905.600	675.100	245.300	1998.500	661.400	395.500
Mean	5848.400	344.450	12400.600	13923.750	679.000	245.450	1998.750	661.200	395.850
%RSD	0.307	0.226	0.214	0.184	0.812	0.086	0.018	0.043	0.125
	Pb	Se							
	Reading	Reading							
#1									
#2									
Mean	0.000	0.000							
%RSD	0.000	0.000							

Method : Paragon2 File : 130311A
SampleId1 : B1 SampleId2 :
Analysis commenced : 3/11/2013 12:02:50
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:36
[STD]

Position : TUBE6

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	4701.800	291.400	4887.200	18851.100	30483.900	95162.700	266.600	96.400	40136.600
#2	4704.400	289.900	4902.000	18873.600	30550.700	94685.200	259.700	95.000	40080.400
Mean	4703.100	290.650	4894.600	18862.350	30517.300	94923.950	263.150	95.700	40108.500
%RSD	0.039	0.365	0.214	0.084	0.155	0.356	1.854	1.034	0.099

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	11486.100	53054.000	11908.300	109.900	1044.400	175.900	184.200	16538.300	17330.100
#2	11438.200	52877.800	11947.700	108.900	1031.000	173.500	181.500	16484.700	17290.000
Mean	11462.150	52965.900	11928.000	109.400	1037.700	174.700	182.850	16511.500	17310.050
%RSD	0.295	0.235	0.234	0.646	0.913	0.971	1.044	0.230	0.164

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	329.300	55517.800	21000.600	68456.500	37386.400	11.200	2053.400	4097.600	5980.700
#2	325.600	55338.300	20916.000	68203.800	37569.800	11.200	2048.900	4104.300	6043.800
Mean	327.450	55428.050	20958.300	68330.150	37478.100	11.200	2051.150	4100.950	6012.250
%RSD	0.799	0.229	0.285	0.262	0.346	0.000	0.155	0.116	0.742

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	53563.200	2884.500	117721.300	137962.700	5042.500	269.400	18230.500	6305.200	464.800
#2	53716.300	2874.400	117839.500	137840.800	5042.600	265.000	18193.200	6257.100	458.200
Mean	53639.750	2879.450	117780.400	137901.750	5042.550	267.200	18211.850	6281.150	461.500
%RSD	0.202	0.248	0.071	0.063	0.001	1.164	0.145	0.541	1.011

	Pb	Se							
	Reading	Reading							
#1									
#2									

Mean 0.000 0.000ser: STEVE WORKMAN
%RSD 0.000 0.000

Method : Paragon2 File : 130311A
SampleId1 : A5 SampleId2 :
Analysis commenced : 3/11/2013 12:04:39
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:37
[STD]

Position : TUBE7

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	164.900	1593.800	168.500	139.800	38.300	485.900	191.800	3437.800	166.500
#2	163.300	1603.700	171.600	133.100	36.100	478.800	192.200	3447.500	162.600
Mean	164.100	1598.750	170.050	136.450	37.200	482.350	192.000	3442.650	164.550
%RSD	0.689	0.438	1.289	3.472	4.182	1.041	0.147	0.199	1.676

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	143.700	302.700	90.200	2664.900	2166.100	3997.300	1915.300	20.600	91.200
#2	142.900	297.900	88.500	2673.300	2167.100	4009.600	1923.500	19.600	88.500
Mean	143.300	300.300	89.350	2669.100	2166.600	4003.450	1919.400	20.100	89.850
%RSD	0.395	1.130	1.345	0.223	0.033	0.217	0.302	3.518	2.125

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	3728.000	303.900	81.700	2828.700	848.800	8.400	206.400	397.600	270.700
#2	3749.700	298.700	83.400	2816.400	848.700	8.100	206.300	398.700	273.400
Mean	3738.850	301.300	82.550	2822.550	848.750	8.250	206.350	398.150	272.050
%RSD	0.410	1.220	1.456	0.308	0.008	2.571	0.034	0.195	0.702

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	430.800	64.100	111.400	351.100	204.200	249.600	207.800	25.900	385.600
#2	417.300	63.700	103.500	342.600	203.100	247.000	205.700	25.500	383.000
Mean	424.050	63.900	107.450	346.850	203.650	248.300	206.750	25.700	384.300
%RSD	2.251	0.443	5.199	1.733	0.382	0.740	0.718	1.101	0.478

	Pb	Se
	Reading	Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2 File : 130311A
SampleId1 : A4 SampleId2 :
Analysis commenced : 3/11/2013 12:06:29
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:37
[STD]

Position : TUBE8

Raw intensities 13:05:38 User: STEVE WORKMAN

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	166.900	13588.200	186.300	125.000	32.400	478.400	191.300	32719.500	162.100
#2	165.600	13623.400	189.700	124.600	32.200	478.400	191.300	32740.600	161.700
Mean	166.250	13605.800	188.000	124.800	32.300	478.400	191.300	32730.050	161.900
%RSD	0.553	0.183	1.279	0.227	0.438	0.000	0.000	0.046	0.175

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	143.100	318.600	88.600	24900.100	11005.200	37862.200	17193.000	22.400	96.200
#2	142.600	317.700	88.400	24931.400	11037.300	37940.500	17210.400	22.400	95.700
Mean	142.850	318.150	88.500	24915.750	11021.250	37901.350	17201.700	22.400	95.950
%RSD	0.247	0.200	0.160	0.089	0.206	0.146	0.072	0.000	0.368

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	32007.400	295.800	87.300	3190.800	942.800	9.200	242.000	453.000	307.300
#2	32089.300	296.500	85.300	3179.900	948.800	9.100	241.000	451.400	307.600
Mean	32048.350	296.150	86.300	3185.350	945.800	9.150	241.500	452.200	307.450
%RSD	0.181	0.167	1.639	0.242	0.449	0.773	0.293	0.250	0.069

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	434.400	70.900	59.200	353.400	231.400	285.100	224.300	28.800	398.400
#2	432.100	71.400	58.600	351.100	227.900	284.500	223.800	28.400	398.100
Mean	433.250	71.150	58.900	352.250	229.650	284.800	224.050	28.600	398.250
%RSD	0.375	0.497	0.720	0.462	1.078	0.149	0.158	0.989	0.053

	Pb	Se
	Reading	Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2 File : 130311A
SampleId1 : A3 SampleId2 :
Analysis commenced : 3/11/2013 12:08:18
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:37
[STD]
Position : TUBE9

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	169.600	26427.300	206.600	127.300	32.300	488.700	197.100	63137.600	168.300
#2	167.200	26475.400	207.200	126.900	32.200	486.700	197.600	63197.200	167.900
Mean	168.400	26451.350	206.900	127.100	32.250	487.700	197.350	63167.400	168.100
%RSD	1.008	0.129	0.205	0.223	0.219	0.290	0.179	0.067	0.168

ted: 3/12/2013 13:05:38 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	145.800	332.800	89.000	47542.400	21866.000	79274.900	33522.000	27.700	109.500
#2	146.100	332.500	88.700	47607.000	21897.400	79391.700	33560.000	27.700	109.700
Mean	145.950	332.650	88.850	47574.700	21881.700	79333.300	33541.000	27.700	109.600
%RSD	0.145	0.064	0.239	0.096	0.101	0.104	0.080	0.000	0.129

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	62997.400	299.300	91.300	3607.300	1082.500	9.800	279.500	505.900	351.400
#2	63042.600	300.800	93.100	3597.900	1081.800	10.000	279.900	512.200	349.100
Mean	63020.000	300.050	92.200	3602.600	1082.150	9.900	279.700	509.050	350.250
%RSD	0.051	0.353	1.380	0.185	0.046	1.428	0.101	0.875	0.464

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	452.700	79.000	63.500	375.900	257.500	308.500	235.500	33.700	408.900
#2	452.600	78.800	63.100	375.500	254.800	309.200	237.400	33.400	407.900
Mean	452.650	78.900	63.300	375.700	256.150	308.850	236.450	33.550	408.400
%RSD	0.016	0.179	0.447	0.075	0.745	0.160	0.568	0.632	0.173

	Pb	Se
	Reading	Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:05:37

SampleId1 : A2

SampleId2 :

[STD]

Analysis commenced : 3/11/2013 12:10:07

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : TUBE10

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	168.800	50315.700	249.800	139.100	32.700	500.200	199.600	118858.300	176.200
#2	167.400	50242.800	243.500	139.200	32.700	500.400	196.100	118343.000	177.200
Mean	168.100	50279.250	246.650	139.150	32.700	500.300	197.850	118600.650	176.700
%RSD	0.589	0.103	1.806	0.051	0.000	0.028	1.251	0.307	0.400

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	150.900	349.400	90.100	87700.100	42222.900	162051.400	64278.000	37.500	138.200
#2	149.800	347.500	89.700	87544.800	42164.500	161736.700	64151.500	37.400	136.500
Mean	150.350	348.450	89.900	87622.450	42193.700	161894.050	64214.750	37.450	137.350
%RSD	0.517	0.386	0.315	0.125	0.098	0.137	0.139	0.189	0.875

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	115647.900	309.800	104.200	4404.400	1334.900	11.500	352.300	619.100	433.500
#2	115472.600	307.400	103.300	4384.400	1335.700	11.700	353.900	622.600	429.500
Mean	115560.250	308.600	103.750	4394.400	1335.300	11.600	353.100	620.850	431.500
%RSD	0.107	0.550	0.613	0.322	0.042	1.219	0.320	0.399	0.655

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	477.200	93.300	72.400	407.900	305.200	345.800	253.700	42.100	415.200
#2	476.000	92.900	72.300	406.300	306.000	347.000	252.800	42.200	413.800
Mean	476.600	93.100	72.350	407.100	305.600	346.400	253.250	42.150	414.500
%RSD	0.178	0.304	0.098	0.278	0.185	0.245	0.251	0.168	0.239

	Pb	Se
	Reading	Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2 File : 130311A
SampleId1 : A1 SampleId2 :
Analysis commenced : 3/11/2013 12:11:57
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:37
[STD]

Position : TUBE11

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	174.800	113499.800	367.300	179.300	35.700	547.900	218.900	266763.200	207.400
#2	173.400	113755.400	365.600	178.000	35.600	548.700	222.200	266981.400	205.600
Mean	174.100	113627.600	366.450	178.650	35.650	548.300	220.550	266872.300	206.500
%RSD	0.569	0.159	0.328	0.515	0.198	0.103	1.058	0.058	0.616

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	172.600	401.600	95.900	185147.100	93310.400	393215.000	152104.000	66.300	224.300
#2	173.100	400.500	95.700	185570.000	93373.300	393903.000	152537.700	66.500	224.000
Mean	172.850	401.050	95.800	185358.550	93341.850	393559.000	152320.850	66.400	224.150
%RSD	0.205	0.194	0.148	0.161	0.048	0.124	0.201	0.213	0.095

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	222393.300	350.300	131.900	6861.200	2060.400	16.400	581.000	956.300	652.700
#2	222289.900	351.300	132.500	6884.000	2080.800	17.000	585.000	948.500	663.700
Mean	222341.600	350.800	132.200	6872.600	2070.600	16.700	583.000	952.400	658.200
%RSD	0.033	0.202	0.321	0.235	0.697	2.541	0.485	0.579	1.182

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	539.700	139.100	97.700	504.000	463.500	450.100	310.200	68.900	451.500
#2	539.600	139.600	97.600	502.300	469.100	450.600	308.300	69.300	449.700
Mean	539.650	139.350	97.650	503.150	466.300	450.350	309.250	69.100	450.600
%RSD	0.013	0.254	0.072	0.239	0.849	0.079	0.434	0.409	0.282

	Pb Reading	Se Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2 File : 130311A
SampleId1 : C3 **SampleId2 :**
Analysis commenced : 3/11/2013 12:13:47
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:37
[STD]

Position : TUBE12

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	167.300	201.300	164.200	109.000	31.800	464.500	226.800	74.000	157.300
#2	165.700	200.100	162.800	109.500	31.700	464.200	224.700	72.600	155.700
Mean	166.500	200.700	163.500	109.250	31.750	464.350	225.750	73.300	156.500
%RSD	0.680	0.423	0.605	0.324	0.223	0.046	0.658	1.351	0.723

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	141.500	293.100	87.900	72.800	1026.200	163.900	170.900	17.000	79.100
#2	141.000	291.300	87.800	70.900	1021.200	162.500	170.000	16.800	79.000
Mean	141.250	292.200	87.850	71.850	1023.700	163.200	170.450	16.900	79.050
%RSD	0.250	0.436	0.080	1.870	0.345	0.607	0.373	0.837	0.089

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	203.000	288.800	76.200	2765.200	820.100	22.100	202.800	393.500	267.400
#2	200.400	293.500	76.600	2751.500	817.900	22.200	202.600	391.700	265.700
Mean	201.700	291.150	76.400	2758.350	819.000	22.150	202.700	392.600	266.550
%RSD	0.911	1.141	0.370	0.351	0.190	0.319	0.070	0.324	0.451

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	390.300	62.800	51.700	316.200	197.300	328.800	202.700	23.900	880.400
#2	391.300	62.600	51.400	312.900	198.400	328.600	202.400	23.800	890.000
Mean	390.800	62.700	51.550	314.550	197.850	328.700	202.550	23.850	885.200
%RSD	0.181	0.226	0.412	0.742	0.393	0.043	0.105	0.296	0.767

	Pb Reading	Se Reading

#1 ser: STEVE WORKMAN
 #2
 Mean 0.000 0.000
 %RSD 0.000 0.000

Method : Paragon2 File : 130311A Printed : 3/12/2013 13:05:38
 SampleId1 : C2 SampleId2 : [STD]
 Analysis commenced : 3/11/2013 12:15:37
 Dilution ratio : 1.00000 to 1.00000 Tray : Position : TUBE13

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	195.600	220.500	169.200	118.100	32.600	506.700	535.000	77.300	162.400
#2	195.200	219.800	168.200	116.000	32.500	503.500	532.400	76.700	162.000
Mean	195.400	220.150	168.700	117.050	32.550	505.100	533.700	77.000	162.200
%RSD	0.145	0.225	0.419	1.269	0.217	0.448	0.344	0.551	0.174

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	147.600	356.600	98.600	76.000	1040.900	169.800	218.700	19.100	81.700
#2	147.100	356.000	98.300	75.200	1039.700	169.300	218.500	19.100	80.200
Mean	147.350	356.300	98.450	75.600	1040.300	169.550	218.600	19.100	80.950
%RSD	0.240	0.119	0.215	0.748	0.082	0.209	0.065	0.000	1.310

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	217.200	304.500	76.300	2871.900	858.700	145.000	206.700	393.600	268.200
#2	216.000	304.000	77.200	2876.300	856.300	144.900	208.600	400.100	270.800
Mean	216.600	304.250	76.750	2874.100	857.500	144.950	207.650	396.850	269.500
%RSD	0.392	0.116	0.829	0.108	0.198	0.049	0.647	1.158	0.682

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	440.600	64.300	54.900	351.900	205.800	1061.200	225.900	24.600	5608.100
#2	440.800	64.500	54.800	353.500	201.100	1061.900	225.600	24.600	5626.000
Mean	440.700	64.400	54.850	352.700	203.450	1061.550	225.750	24.600	5617.050
%RSD	0.032	0.220	0.129	0.321	1.634	0.047	0.094	0.000	0.225

	Pb	Se
	Reading	Reading
#1		
#2		
Mean	0.000	0.000
%RSD	0.000	0.000

Method : Paragon2 File : 130311A Printed : 3/12/2013 13:05:38
 SampleId1 : C1 SampleId2 : [STD]
 Analysis commenced : 3/11/2013 12:17:27

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE14

Raw intensities

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	448.600	407.300	181.700	189.400	34.000	869.100	3543.300	162.900	185.700
#2	450.000	408.000	183.800	187.400	34.200	866.300	3530.200	162.500	188.500
Mean	449.300	407.650	182.750	188.400	34.100	867.700	3536.750	162.700	187.100
%RSD	0.220	0.121	0.813	0.751	0.415	0.228	0.262	0.174	1.058
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	182.700	921.200	188.300	149.000	1025.300	223.800	678.500	38.400	87.700
#2	183.100	916.800	188.300	149.100	1033.200	224.600	675.600	38.400	87.700
Mean	182.900	919.000	188.300	149.050	1029.250	224.200	677.050	38.400	87.700
%RSD	0.155	0.339	0.000	0.047	0.543	0.252	0.303	0.000	0.000
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	252.700	374.000	96.100	3581.800	1123.600	1356.000	224.500	437.600	291.100
#2	253.800	371.500	99.100	3593.600	1129.700	1344.800	227.300	442.200	295.600
Mean	253.250	372.750	97.600	3587.700	1126.650	1350.400	225.900	439.900	293.350
%RSD	0.307	0.474	2.173	0.233	0.383	0.586	0.876	0.739	1.085
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading	Reading
#1	888.600	73.800	77.800	679.500	234.100	8366.200	416.600	27.200	52525.400
#2	883.000	73.600	78.100	676.200	227.800	8301.100	415.600	26.500	52172.400
Mean	885.800	73.700	77.950	677.850	230.950	8333.650	416.100	26.850	52348.900
%RSD	0.447	0.192	0.272	0.344	1.929	0.552	0.170	1.843	0.477
	Pb	Se							
	Reading	Reading							
#1									
#2									
Mean	0.000	0.000							
%RSD	0.000	0.000							

Line calibration information

Analyte	Reporting name	C0	C1	C2	C3	Correlation coefficient	Low limit	High limit	Date of last regression
Ag 328.068	Ag	0.0002121	0.0004654	0.0	0	1.0000	-1.450	4288.250	3/11/2013 12:29:30
Al 308.215	Al	-0.0714972	0.0037336	0.0	0	0.99999	11.600	109379.500	3/11/2013 12:29:31
As 189.042/2	As	0.0038377	0.0011656	0.0	0	1.0000	-3.850	4299.600	3/11/2013 12:29:31
B 249.678/2	B	-0.0107024	0.0006133	0.0	0	1.0000	2.150	16355.650	3/11/2013 12:29:31
Ba 493.409	Ba	-0.0012	0.0003648	0.0	0	1.0000	0.000	26700.450	3/11/2013 12:29:31
Be 313.042	Be	-0.0053437	0.0000106	0.0	0	1.0000	458.000	94923.950	3/11/2013 12:29:31
Bi 223.061	Bi	0.0011107	0.0017508	0.0000000	0	1.0000	-3.000	2794.600	3/11/2013 12:29:31
Ca 317.933	Ca	-0.1077042	0.0015617	0.0	0	1.0000	4.750	255303.500	3/11/2013 12:29:32
Cd 226.502/2	Cd	-0.0009275	0.0001452	0.0	0	1.0000	0.200	33510.950	3/11/2013 12:29:32
Co 228.616	Co	-0.000389	0.000452	0.0	0	1.0000	-1.950	11041.850	3/11/2013 12:29:32
Cr 267.716	Cr	-0.0010632	0.0001931	0.0	0	1.0000	-0.650	51763.050	3/11/2013 12:29:32
Cu 324.753	Cu	-0.0153569	0.0009417	0.0	0	1.0000	14.800	10803.800	3/11/2013 12:29:32
Fe 259.94	Fe	-0.0119624	0.0007787	0.0	0	1.0000	1.000	181945.300	3/11/2013 12:29:32
K 766.491	K	-2.4920714	0.0023428	0.0	0	0.99998	1020.450	93341.850	3/11/2013 12:29:33
Li 670.784	Li	-0.0070261	0.0000261	0.0	0	0.99999	162.150	393559.000	3/11/2013 12:29:33
Mg 279.078	Mg	-0.0417495	0.0030674	0.0	0	1.0000	-1.200	147587.100	3/11/2013 12:29:33
Mn 257.610	Mn	-0.0011684	0.000593	0.0	0	1.0000	0.000	16227.650	3/11/2013 12:29:33
Mo 202.030/2	Mo	-0.0024069	0.0006285	0.0	0	1.0000	-0.600	15759.950	3/11/2013 12:29:33
Na 588.995	Na	-0.0761644	0.0004086	0.0	0	0.99998	187.750	222341.600	3/11/2013 12:29:34
Ni 231.604	Ni	-0.0028689	0.0002192	0.0	0	1.0000	1.350	45631.300	3/11/2013 12:29:34
P 178.287/2	P	-0.0017327	0.0022831	0.0	0	1.0000	-5.100	20515.700	3/11/2013 12:29:34
Pb 220.351	Pb I	0.0004775	0.0001576	0.0	0	1.0000	-17.900	63331.050	3/11/2013 12:29:34
Pb 220.352/2	Pb II	-0.0042496	0.0002905	0.0	0	1.0000	10.200	34732.050	3/11/2013 12:29:34
S 182.04/2	S	-0.0625666	0.0372993	0.0000005	0	1.0000	1.350	1318.400	3/11/2013 12:29:34
Sb 206.838/2	Sb	-0.0024073	0.0013187	0.0	0	1.0000	0.700	1506.400	3/11/2013 12:29:34
Se 196.021	Se I	0.0006193	0.0013741	0.0	0	1.0000	-3.250	3603.050	3/11/2013 12:29:35
Se 196.021/2	Se II	0.0000044	0.0008807	0.0	0	1.0000	-1.400	5554.000	3/11/2013 12:29:35
Si 288.158	Si	-0.1192407	0.0009331	0.0	0	1.0000	107.150	56968.550	3/11/2013 12:29:35
Sn 189.989	Sn	0.0001004	0.0036583	0.0	0	1.0000	-0.850	9709.750	3/11/2013 12:29:35
Sr 421.552	Sr	-0.004448	0.0000939	0.0	0	1.0000	-0.150	170730.050	3/11/2013 12:29:35

Ti 334.941	Ti	-0.0022797	0.0000764	0.0	0	1.0000	-10.100	132882.950	3/11/2013 12:29:35
Tl 190.864/2	Tl	0.0027512	0.0011926	0.0	0	1.0000	-0.350	4230.000	3/11/2013 12:29:36
U 385.958	U	-0.0222583	0.0064664	0.0	0	1.0000	-1.950	7709.600	3/11/2013 12:29:36
V 292.402	V	-0.0005748	0.0002865	0.0	0	1.0000	-1.100	17487.950	3/11/2013 12:29:36
Zn 206.2	Zn	-0.0024721	0.0017146	0.0	0	1.0000	0.100	5717.050	3/11/2013 12:29:36
Zr 339.198	Zr	-0.0009584	0.0000991	0.0	0	1.0000	2.600	50187.400	3/11/2013 12:29:38

Method : Paragon2 File : 130311A
 SampleId1 : MIXAHIGH SampleId2 :
 Analysis commenced : 3/11/2013 12:30:07
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:53
 [CV]
 Position : TUBE11

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00170	499.79366	0.00780	-0.00764	-0.00054	0.00051	0.02532	495.96131	0.00041
#2	0.00068	500.25877	0.00174	-0.00991	-0.00058	0.00051	0.02199	496.94795	0.00031
Mean	0.00119	500.02622	0.00477	-0.00877	-0.00056	0.00051	0.02365	496.45463	0.00036
%RSD	60.22046	0.06577	89.84528	18.29499	4.59205	1.06403	9.96320	0.14053	20.28981
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00146	0.00084	-0.00778	197.28604	249.39979	9.80509	494.96295	0.00642	-0.00153
#2	0.00110	0.00034	-0.00899	197.77723	249.62236	9.79968	496.23218	0.00589	-0.00241
Mean	0.00128	0.00059	-0.00838	197.53163	249.51107	9.80238	495.59756	0.00616	-0.00197
%RSD	19.96967	59.25035	10.24855	0.17583	0.06308	0.03898	0.18109	6.13130	31.63399
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	150.83681	0.00219	0.00535	0.03936	-0.03139	0.11648	0.01973	0.02421	-0.01058
#2	150.67185	0.00018	0.00192	0.03232	-0.02878	0.12021	0.01617	0.02929	-0.00363
Mean	150.75433	0.00119	0.00363	0.03584	-0.03009	0.11835	0.01795	0.02675	-0.00710
%RSD	0.07737	120.24339	66.66263	13.89444	6.14727	2.22888	14.01909	13.41884	69.13084
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	-0.02004	0.00486	-0.00163	0.00013	-0.01306	0.24275	-0.00125	-0.00470	0.00443
#2	-0.02311	-0.00063	-0.00165	0.00033	-0.02928	0.23360	-0.00293	-0.00419	0.00401
Mean	-0.02158	0.00211	-0.00164	0.00023	-0.02117	0.23817	-0.00209	-0.00444	0.00422
%RSD	10.05850	183.71093	0.81037	60.09994	54.15822	2.71418	56.92553	8.18457	6.96708
	Pb calc	Se calc							
#1	-0.00783	0.00101							
#2	-0.00843	0.00733							
Mean	-0.00813	0.00417							
%RSD	5.22217	107.22355							

Method : Paragon2 File : 130311A
 SampleId1 : MIXBHIGH SampleId2 :
 Analysis commenced : 3/11/2013 12:31:57
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:54
 [CV]
 Position : TUBE6

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	1.98749	0.24132	4.98899	9.92651	9.88497	0.98424	0.00789	0.06988	4.97806
#2	2.00134	0.20581	5.00626	9.98142	9.94114	0.98636	0.00310	0.03286	4.98901
Mean	1.99441	0.22356	4.99762	9.95396	9.91306	0.98530	0.00549	0.05137	4.98353
%RSD	0.49111	11.23194	0.24422	0.39010	0.40067	0.15194	61.70704	50.95632	0.15533

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	4.94760	9.88089	9.93904	0.04037	0.02739	-0.00034	0.03862	9.83307	9.93980
#2	4.96020	9.91483	10.01416	0.02332	-0.00576	-0.00105	0.00212	9.87147	9.97773
Mean	4.95390	9.89786	9.97660	0.03185	0.01081	-0.00069	0.02037	9.85227	9.95877
%RSD	0.17977	0.24247	0.53243	37.87611	216.79859	72.31434	126.73355	0.27561	0.26934

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.09188	10.07707	49.26078	9.90145	9.65158	-0.00662	1.89494	4.94620	4.78046
#2	0.08074	10.07439	49.40361	9.93785	9.82196	0.01949	1.90173	4.98483	4.93545
Mean	0.08631	10.07573	49.33219	9.91965	9.73677	0.00644	1.89833	4.96552	4.85796
%RSD	9.12575	0.01877	0.20473	0.25946	1.23735	286.74751	0.25302	0.55017	2.25593

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	49.06957	9.93732	9.94946	9.75050	4.94597	-0.08370	4.92800	9.82597	-0.01754
#2	49.60011	9.95382	9.99379	9.79711	4.98528	-0.11279	4.94465	9.85326	-0.01789
Mean	49.33484	9.94557	9.97163	9.77380	4.96562	-0.09824	4.93633	9.83962	-0.01771
%RSD	0.76042	0.11736	0.31432	0.33717	0.55979	20.94130	0.23854	0.19610	1.38677

	Pb calc	Se calc
#1	9.73479	4.83565
#2	9.86055	4.95190
Mean	9.79767	4.89377
%RSD	0.90766	1.67958

Method : Paragon2 File : 130311A
SampleId1 : MIXCHIGH SampleId2 :
Analysis commenced : 3/11/2013 12:33:46
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:54

[CV]

Position : TUBE14

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00417	0.37842	0.00174	0.02168	-0.00102	0.01624	5.00704	-0.05601	-0.00124
#2	-0.00466	0.37521	-0.00409	0.02076	-0.00091	0.01637	5.05340	-0.05788	-0.00147
Mean	-0.00442	0.37681	-0.00117	0.02122	-0.00096	0.01631	5.03022	-0.05695	-0.00136
%RSD	7.88819	0.60222	350.93216	3.06554	8.03574	0.54420	0.65165	2.32712	11.55723

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00534	-0.01273	-0.01105	-0.01079	-0.08358	-0.00108	-0.21628	0.00405	0.00375
#2	0.00480	-0.01474	-0.01203	-0.01212	-0.09180	-0.00110	-0.24020	0.00381	0.00231
Mean	0.00507	-0.01373	-0.01154	-0.01146	-0.08769	-0.00109	-0.22824	0.00393	0.00303
%RSD	7.56136	10.37468	6.02081	8.17075	6.63443	1.18136	7.41179	4.26635	33.73736

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.02810	-0.00239	0.02886	-0.02245	0.01510	49.42045	0.00308	-0.00769	0.00850
#2	0.02716	-0.00144	0.02201	-0.02409	0.01144	50.08890	0.00311	-0.00293	0.00911
Mean	0.02763	-0.00192	0.02544	-0.02327	0.01327	49.75467	0.00310	-0.00531	0.00880
%RSD	2.40852	34.78972	19.04119	4.98353	19.50392	0.94999	0.52152	63.31393	4.88593

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	-0.00695	0.02314	-0.00208	0.00586	-0.01047	49.65109	-0.00652	-0.00041	4.97370
#2	-0.01755	0.01509	-0.00197	0.00565	0.00451	50.17711	-0.00709	-0.00110	5.00589
Mean	-0.01225	0.01912	-0.00202	0.00576	-0.00298	49.91410	-0.00681	-0.00076	4.98980
%RSD	61.17449	29.76863	3.93720	2.62727	355.48723	0.74519	5.93051	64.01614	0.45620

	Pb calc	Se calc
#1	0.00260	0.00311
#2	-0.00039	0.00510
Mean	0.00110	0.00410
%RSD	191.60668	34.29176

Method : Paragon2
SampleId1 : ICV
Analysis commenced : 3/11/2013 12:35:56
Dilution ratio : 1.00000 to 1.00000

File : 130311A
SampleId2 :
Tray :

Printed : 3/12/2013 13:05:54
[CV]
Position : STD5

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.09876	25.81154	0.26046	0.51153	0.52114	0.25458	0.26236	25.68656	0.25864
#2	0.09987	25.78631	0.26325	0.51257	0.52231	0.25550	0.25886	25.74396	0.25754
Mean	0.09931	25.79893	0.26185	0.51205	0.52172	0.25504	0.26061	25.71526	0.25809
%RSD	0.78891	0.06915	0.75516	0.14395	0.15866	0.25556	0.95086	0.15783	0.30056

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.24935	0.50488	0.51296	10.30434	23.73437	0.24720	25.22850	0.50172	0.49778
#2	0.25061	0.50731	0.51370	10.32527	23.72418	0.24781	25.25922	0.50320	0.49847
Mean	0.24998	0.50609	0.51333	10.31480	23.72927	0.24751	25.24386	0.50246	0.49812
%RSD	0.35786	0.33959	0.10300	0.14347	0.03039	0.17340	0.08605	0.20949	0.09824

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
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#1	23.38221	0.50441	2.50957	0.50320	0.49637	2.62189	0.24938	0.51787	0.50561
#2	23.34448	0.50546	2.52038	0.50423	0.50122	2.60694	0.25027	0.51856	0.51597
Mean	23.36334	0.50494	2.51498	0.50371	0.49880	2.61441	0.24982	0.51821	0.51079
%RSD	0.11419	0.14733	0.30388	0.14433	0.68653	0.40432	0.25235	0.09452	1.43347

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.53559	0.51643	0.25195	0.25819	0.25273	2.52924	0.24984	0.49304	0.50120
#2	2.52847	0.52046	0.25252	0.25925	0.25012	2.53377	0.25007	0.49665	0.50276
Mean	2.53203	0.51844	0.25223	0.25872	0.25143	2.53151	0.24995	0.49484	0.50198
%RSD	0.19874	0.54885	0.15837	0.29210	0.73475	0.12637	0.06515	0.51558	0.21959

	Pb	Se
	calc	calc
#1	0.49865	0.50969
#2	0.50222	0.51683
Mean	0.50043	0.51326
%RSD	0.50480	0.98330

Method : Paragon2 File : 130311A
SampleId1 : ICB SampleId2 :
Analysis commenced : 3/11/2013 12:37:47
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:54
[CB]

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00051	0.04700	-0.00549	-0.00236	0.00092	0.00004	-0.00118	-0.04258	-0.00019
#2	0.00022	0.04292	-0.00211	-0.00046	0.00106	0.00002	-0.00328	-0.04289	0.00042
Mean	-0.00014	0.04496	-0.00380	-0.00141	0.00099	0.00003	-0.00223	-0.04273	0.00012
%RSD	363.95072	6.42280	62.95119	95.27928	10.43644	35.80993	66.50861	0.51685	378.22332

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00034	-0.00038	-0.00054	0.01015	-0.11696	-0.00265	0.00426	-0.00022	-0.00077
#2	-0.00052	-0.00010	-0.00046	0.01039	-0.11132	-0.00263	0.00334	-0.00010	-0.00052
Mean	-0.00043	-0.00024	-0.00050	0.01027	-0.11414	-0.00264	0.00380	-0.00016	-0.00065
%RSD	29.88504	81.59485	11.39835	1.60851	3.49511	0.41986	17.11320	52.32503	27.47698

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04598	-0.00068	-0.00196	-0.00014	-0.00123	-0.00662	-0.00056	0.00649	0.00450
#2	0.04562	-0.00164	-0.00539	-0.00181	-0.00147	0.00084	-0.00162	-0.00448	0.00194
Mean	0.04580	-0.00116	-0.00367	-0.00097	-0.00135	-0.00289	-0.00109	0.00100	0.00322
%RSD	0.56871	58.81616	65.92400	121.59221	12.70439	182.75204	68.71759	772.52089	56.07418

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.01197	-0.00026	-0.00111	-0.00259	-0.00131	-0.03519	0.00023	-0.00179	0.00057

#2	-0.01161	0.00010	-0.00109	-0.00256	-0.00190	-0.02097	0.00017	-0.00179	0.00052
Mean	-0.01179	-0.00008	-0.00110	-0.00258	-0.00160	-0.02808	0.00020	-0.00179	0.00055
%RSD	2.11596	325.38537	1.20344	0.83828	25.90717	35.82377	20.25686	0.00000	6.43491
	Pb	Se							
	calc	calc							
#1	-0.00087	0.00516							
#2	-0.00159	-0.00020							
Mean	-0.00123	0.00248							
%RSD	41.49190	152.63450							

Method : Paragon2 File : 130311A
SampleId1 : CRI SampleId2 :
Analysis commenced : 3/11/2013 12:39:26
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:54
[CV]

Position : STD6

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02186	0.45063	0.01713	0.41213	0.42455	0.01187	0.06090	5.21440	0.01181
#2	0.01994	0.43999	0.00675	0.41287	0.42725	0.01193	0.05125	5.23877	0.01136
Mean	0.02090	0.44531	0.01194	0.41250	0.42590	0.01190	0.05607	5.22659	0.01158
%RSD	6.48995	1.68945	61.44195	0.12614	0.44921	0.32770	12.16907	0.32971	2.75832
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.10371	0.02225	0.05344	0.20886	3.83315	0.01487	5.22376	0.03198	0.02299
#2	0.10250	0.02130	0.05255	0.20824	3.85371	0.01499	5.22592	0.03193	0.02035
Mean	0.10310	0.02177	0.05300	0.20855	3.84343	0.01493	5.22484	0.03196	0.02167
%RSD	0.83410	3.09540	1.19491	0.21149	0.37833	0.54394	0.02913	0.13126	8.61578
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.01878	0.08539	0.19901	0.01791	0.00258	0.27690	0.12509	0.01238	0.00981
#2	4.04500	0.08283	0.19513	0.00437	0.00770	0.27317	0.12615	0.01467	0.01765
Mean	4.03189	0.08411	0.19707	0.01114	0.00514	0.27503	0.12562	0.01352	0.01373
%RSD	0.45988	2.15582	1.39345	85.95079	70.42404	0.95920	0.59433	11.98334	40.37584
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.10307	0.10654	0.01860	0.01973	0.01850	0.22472	0.10566	0.03937	0.05384
#2	0.09809	0.10507	0.01858	0.01955	0.02086	0.17752	0.10498	0.03954	0.05293
Mean	0.10058	0.10581	0.01859	0.01964	0.01968	0.20112	0.10532	0.03945	0.05338
%RSD	3.50058	0.97787	0.07149	0.66016	8.47958	16.59680	0.46090	0.30735	1.20659
	Pb	Se							
	calc	calc							
#1	0.00768	0.01066							
#2	0.00659	0.01666							

Mean 0.00714 0.01366ser: STEVE WORKMAN
%RSD 10.85628 31.01764

Method : Paragon2 File : 130311A
SampleId1 : ICSA SampleId2 :
Analysis commenced : 3/11/2013 12:41:16
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:54
[ICSAB]

Position : STD3

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00011	272.39214	-0.00479	0.00107	-0.00029	0.00029	0.00532	269.04128	0.00075
#2	-0.00061	273.26146	0.00151	0.00070	-0.00040	0.00029	0.00900	269.22769	-0.00010
Mean	-0.00036	272.82680	-0.00164	0.00089	-0.00034	0.00029	0.00716	269.13449	0.00033
%RSD	98.69928	0.22531	271.29376	29.27247	22.57086	0.15911	36.27477	0.04898	182.90418
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00260	-0.00139	-0.00624	110.10582	-0.21756	-0.00274	270.00817	0.00358	-0.00184
#2	0.00233	-0.00219	-0.00660	110.33474	-0.22085	-0.00276	270.42033	0.00340	-0.00109
Mean	0.00246	-0.00179	-0.00642	110.22028	-0.21920	-0.00275	270.21425	0.00349	-0.00146
%RSD	7.79542	31.65558	4.00846	0.14686	1.06143	0.40311	0.10786	3.60791	36.42716
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.07394	0.00156	0.01630	0.01358	-0.01274	0.02322	0.00341	0.01378	-0.00397
#2	0.07341	-0.00125	0.01402	0.00963	-0.01028	0.04934	0.00224	0.01404	0.00012
Mean	0.07368	0.00016	0.01516	0.01160	-0.01151	0.03628	0.00282	0.01391	-0.00192
%RSD	0.51085	1274.46285	10.64768	24.04995	15.06324	50.89168	29.33608	1.33429	150.27697
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	-0.00893	0.00449	-0.00181	-0.00181	-0.01379	0.11431	-0.00215	-0.00316	0.00213
#2	-0.00975	0.00266	-0.00184	-0.00178	-0.01046	0.10134	-0.00343	-0.00419	0.00200
Mean	-0.00934	0.00358	-0.00182	-0.00179	-0.01212	0.10782	-0.00279	-0.00367	0.00206
%RSD	6.18759	36.15041	1.09338	0.90304	19.45119	8.50857	32.25173	19.80834	4.41491
	Pb calc	Se calc							
#1	-0.00397	0.00194							
#2	-0.00365	0.00476							
Mean	-0.00381	0.00335							
%RSD	5.95632	59.37216							

Method : Paragon2 File : 130311A
SampleId1 : ICSAB SampleId2 :
Analysis commenced : 3/11/2013 12:43:07
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:55
[ICSAB]

Position : STD4

Final concentrations6:26 User: STEVE WORKMAN

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.19879	262.06505	0.10465	0.99724	0.50958	0.49413	0.54133	259.30142	1.00533
#2	0.19788	261.41951	0.10337	0.99196	0.50760	0.49260	0.53868	258.14109	0.99861
Mean	0.19834	261.74228	0.10401	0.99460	0.50859	0.49337	0.54000	258.72125	1.00197
%RSD	0.32281	0.17439	0.87152	0.37483	0.27463	0.21997	0.34782	0.31713	0.47410
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.47770	0.48027	0.53434	106.35849	-0.18935	1.05445	261.71790	0.48713	0.96129
#2	0.47418	0.47755	0.53230	105.96378	-0.19264	1.05197	260.41827	0.48624	0.95815
Mean	0.47594	0.47891	0.53332	106.16114	-0.19100	1.05321	261.06809	0.48668	0.95972
%RSD	0.52370	0.40186	0.27021	0.26290	1.21822	0.16640	0.35201	0.12975	0.23199
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.03272	0.95806	0.98780	0.06421	0.03449	1.05687	0.59666	0.06811	0.04383
#2	0.03272	0.95164	0.98711	0.05582	0.04197	1.07180	0.58781	0.04526	0.05557
Mean	0.03272	0.95485	0.98746	0.06002	0.03823	1.06434	0.59223	0.05669	0.04970
%RSD	0.00000	0.47557	0.04919	9.88470	13.82787	0.99203	1.05708	28.49539	16.70844
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	0.96606	1.02360	0.98844	0.97974	0.08032	9.72791	0.48208	0.92725	0.48346
#2	0.96292	1.01299	0.98330	0.97762	0.08011	9.69691	0.47998	0.92416	0.48240
Mean	0.96449	1.01829	0.98587	0.97868	0.08021	9.71241	0.48103	0.92570	0.48293
%RSD	0.23023	0.73698	0.36909	0.15301	0.18376	0.22575	0.30966	0.23666	0.15533
	Pb calc	Se calc							
#1	0.04439	0.05191							
#2	0.04658	0.05214							
Mean	0.04549	0.05202							
%RSD	3.40904	0.30669							

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 12:44:58
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:55
[CV]
Position : STD1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.19233	49.61615	0.50709	0.99319	1.01196	0.48618	0.51786	49.98584	0.50468
#2	0.19270	49.70428	0.51175	0.99282	1.01405	0.48659	0.52137	50.04655	0.50481
Mean	0.19251	49.66021	0.50942	0.99301	1.01300	0.48638	0.51961	50.01620	0.50475
%RSD	0.13497	0.12549	0.64675	0.02619	0.14594	0.06016	0.47875	0.08582	0.01804

ted: 3/12/2013 13:06:26 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.47984	0.96799	0.99218	20.05814	48.85844	0.51198	49.07378	0.95937	0.96621
#2	0.48070	0.97008	0.99172	20.08157	48.93014	0.51226	49.12741	0.96165	0.97080
Mean	0.48027	0.96904	0.99195	20.06986	48.89429	0.51212	49.10059	0.96051	0.96851
%RSD	0.12653	0.15231	0.03332	0.08255	0.10370	0.03840	0.07723	0.16719	0.33563

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	47.71247	0.98031	4.89166	0.97023	0.95115	5.04204	0.48523	0.99760	0.96012
#2	47.77106	0.97893	4.87615	0.97478	0.96627	5.03829	0.48482	0.99925	0.99042
Mean	47.74177	0.97962	4.88390	0.97251	0.95871	5.04017	0.48503	0.99843	0.97527
%RSD	0.08678	0.09967	0.22457	0.33038	1.11529	0.05252	0.05882	0.11711	2.19681

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.82468	1.02563	0.49741	0.49409	0.51245	4.83973	0.48167	0.94584	0.96198
#2	4.83305	1.02270	0.49810	0.49532	0.51329	4.83778	0.48133	0.94739	0.96361
Mean	4.82887	1.02416	0.49776	0.49470	0.51287	4.83875	0.48150	0.94662	0.96279
%RSD	0.12254	0.20229	0.09785	0.17555	0.11587	0.02843	0.05017	0.11572	0.12023

	Pb	Se
	calc	calc
#1	0.95751	0.97260
#2	0.96910	0.99336
Mean	0.96330	0.98298
%RSD	0.85142	1.49338

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:05:55

SampleId1 : CCB

SampleId2 :

[CB]

Analysis commenced : 3/11/2013 12:51:33

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00027	0.02133	-0.00122	-0.00653	-0.00011	0.00003	-0.00030	-0.06522	0.00008
#2	-0.00064	0.02718	0.00087	-0.00623	-0.00011	0.00005	-0.00294	-0.06070	-0.00018
Mean	-0.00018	0.02426	-0.00017	-0.00638	-0.00011	0.00004	-0.00162	-0.06296	-0.00005
%RSD	352.20796	17.07877	851.36152	3.39935	0.00000	20.42912	114.95354	5.08674	387.71854

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00088	-0.00066	-0.00131	0.00205	-0.07958	-0.00270	-0.01322	-0.00058	-0.00146
#2	-0.00065	-0.00049	-0.00194	0.00392	-0.09016	-0.00272	-0.01261	-0.00069	-0.00090
Mean	-0.00077	-0.00058	-0.00162	0.00299	-0.08487	-0.00271	-0.01292	-0.00063	-0.00118
%RSD	20.83398	21.51858	27.41957	44.21202	8.81353	0.40854	3.35883	13.21352	33.86199

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.02331	-0.00199	-0.01703	0.00037	-0.00270	-0.01035	0.00195	0.01036	0.00282
#2	0.02425	-0.00175	-0.00379	-0.00098	0.00049	-0.01035	-0.00095	-0.00176	0.00159
Mean	0.02378	-0.00187	-0.01041	-0.00031	-0.00110	-0.01035	0.00050	0.00430	0.00221
%RSD	2.79786	9.10812	89.95978	311.41365	204.71882	0.00000	413.48618	199.48533	39.47803

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	-0.01479	0.00010	-0.00306	-0.00267	-0.00333	-0.01903	-0.00034	-0.00059	-0.00005
#2	-0.01717	0.00084	-0.00302	-0.00276	-0.00633	-0.05006	-0.00077	-0.00161	-0.00001
Mean	-0.01598	0.00047	-0.00304	-0.00272	-0.00483	-0.03454	-0.00056	-0.00110	-0.00003
%RSD	10.51738	110.23073	0.87427	2.38747	43.88238	63.53406	54.32228	66.10215	84.00690

	Pb calc	Se calc
#1	-0.00168	0.00533
#2	0.00000	0.00047
Mean	-0.00084	0.00290
%RSD	141.92923	118.34313

Method : Paragon2 File : 130311A
SampleId1 : F130301-1MB SampleId2 :
Analysis commenced : 3/11/2013 12:53:23
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:55
[SAMPLE]

Position : TUBE60

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00019	-0.00307	-0.00122	-0.00690	-0.00113	-0.00025	0.00039	-0.10193	-0.00043
#2	-0.00032	-0.00273	-0.00146	-0.00770	-0.00127	-0.00024	0.00231	-0.10146	-0.00076
Mean	-0.00006	-0.00290	-0.00134	-0.00730	-0.00120	-0.00024	0.00135	-0.10169	-0.00059
%RSD	585.89075	8.21041	12.30287	7.72429	8.59741	2.64695	100.62999	0.32578	39.73783

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	-0.00124	-0.00108	-0.00195	-0.01173	-0.13553	-0.00300	-0.04635	-0.00117	-0.00228
#2	-0.00079	-0.00154	-0.00232	-0.01157	-0.13788	-0.00299	-0.04635	-0.00111	-0.00260
Mean	-0.00102	-0.00131	-0.00214	-0.01165	-0.13670	-0.00300	-0.04635	-0.00114	-0.00244
%RSD	31.41088	25.00864	12.42330	0.94520	1.21586	0.12325	0.00000	3.68230	9.11364

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	-0.00365	-0.00278	-0.02114	-0.00073	-0.00260	-0.01781	0.00432	-0.00519	-0.00176
#2	-0.00360	-0.00278	-0.01360	-0.00088	-0.00298	-0.01408	0.00420	-0.00230	0.00344
Mean	-0.00362	-0.00278	-0.01737	-0.00080	-0.00279	-0.01594	0.00426	-0.00374	0.00084
%RSD	0.79790	0.00000	30.66665	13.85719	9.56352	16.54489	2.10101	54.46177	437.52589

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.01776	0.00047	-0.00446	-0.00283	-0.00525	-0.03713	-0.00089	-0.00196	-0.00055
#2	-0.01813	-0.00099	-0.00447	-0.00292	-0.00514	-0.03842	-0.00075	-0.00316	-0.00073
Mean	-0.01794	-0.00026	-0.00446	-0.00288	-0.00520	-0.03778	-0.00082	-0.00256	-0.00064
%RSD	1.46817	394.81280	0.14886	2.25428	1.61295	2.42089	12.41825	33.17887	19.76591

	Pb calc	Se calc
#1	-0.00197	-0.00290
#2	-0.00228	0.00153
Mean	-0.00213	-0.00069
%RSD	10.10458	455.63548

Method : Paragon2 File : 130311A
SampleId1 : IP130307-2MB SampleId2 :
Analysis commenced : 3/11/2013 12:55:08
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:55

[SAMPLE]

Position : TUBE1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00010	0.00892	-0.00344	-0.00635	-0.00120	-0.00019	-0.00591	-0.08787	-0.00103
#2	0.00004	0.00923	0.00274	-0.00708	-0.00109	-0.00020	0.00477	-0.08662	-0.00018
Mean	0.00007	0.00908	-0.00035	-0.00672	-0.00115	-0.00019	-0.00057	-0.08725	-0.00061
%RSD	54.59314	2.35451	1251.28595	7.74867	6.75610	3.36103	1320.78824	1.01261	100.19577

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	-0.00169	-0.00139	-0.00242	0.01810	-0.17737	-0.00307	-0.04022	-0.00093	-0.00310
#2	-0.00093	-0.00147	-0.00177	0.01825	-0.16044	-0.00306	-0.04114	-0.00087	-0.00322
Mean	-0.00131	-0.00143	-0.00210	0.01818	-0.16890	-0.00306	-0.04068	-0.00090	-0.00316
%RSD	41.46604	4.18894	21.86740	0.60599	7.08487	0.24124	1.59972	4.65116	2.81190

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.00229	-0.00184	-0.00539	-0.00076	0.00007	-0.01035	-0.00438	-0.00230	0.00150
#2	0.00274	-0.00118	0.00535	-0.00349	-0.00298	-0.01408	0.00234	-0.00463	0.00001
Mean	0.00251	-0.00151	-0.00002	-0.00213	-0.00146	-0.01221	-0.00102	-0.00346	0.00076
%RSD	12.67219	30.78919	37388.66010	90.73385	148.57044	21.59858	466.98782	47.48402	139.99994

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	-0.01421	-0.00319	-0.00442	-0.00316	-0.00381	-0.03584	-0.00117	-0.00230	-0.00066
#2	-0.01069	0.00413	-0.00440	-0.00317	-0.00177	-0.02485	-0.00077	-0.00144	-0.00027
Mean	-0.01245	0.00047	-0.00441	-0.00316	-0.00279	-0.03034	-0.00097	-0.00187	-0.00047
%RSD	20.04432	1100.91935	0.30120	0.17084	51.53715	25.61606	29.22891	32.38161	58.61333

	Pb calc	Se calc
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#1 -0.00020 0.00024ser: STEVE WORKMAN
 #2 -0.00315 -0.00154
Mean -0.00168 -0.00065
 %RSD 124.17484 193.25519

Method : Paragon2 File : 130311A
SampleId1 : IP130307-2LCS SampleId2 :
Analysis commenced : 3/11/2013 12:56:53
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:56
[SAMPLE]

Position : TUBE2

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.08979	1.90728	0.97134	0.88964	0.99791	0.04766	0.00287	37.86220	0.04983
#2	0.08965	1.91551	0.96284	0.88682	0.99336	0.04757	-0.00274	37.80627	0.04877
Mean	0.08972	1.91139	0.96709	0.88823	0.99564	0.04762	0.00007	37.83423	0.04930
%RSD	0.10782	0.30442	0.62140	0.22451	0.32300	0.12196	6010.44708	0.10454	1.52141

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.46871	0.19068	0.25238	0.99024	36.10866	0.47263	37.35120	0.47522	0.96293
#2	0.46793	0.19103	0.25050	0.98984	36.19428	0.47310	37.27664	0.47475	0.96111
Mean	0.46832	0.19086	0.25144	0.99004	36.15147	0.47286	37.31392	0.47498	0.96202
%RSD	0.11691	0.12896	0.52904	0.02797	0.16747	0.06921	0.14130	0.07090	0.13423

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	35.02863	0.49027	0.00215	0.47023	0.45680	-0.01408	0.46537	1.73886	1.66535
#2	35.10848	0.48528	0.00831	0.46750	0.46786	-0.02900	0.46522	1.73401	1.70290
Mean	35.06856	0.48777	0.00523	0.46887	0.46233	-0.02154	0.46530	1.73643	1.68413
%RSD	0.16101	0.72443	83.33130	0.41180	1.69170	48.98656	0.02248	0.19721	1.57661

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	1.06858	0.49421	0.48501	0.48869	1.86948	-0.02890	0.48635	0.46984	-0.00003
#2	1.06727	0.49823	0.48319	0.48834	1.85705	-0.02955	0.48570	0.47070	-0.00064
Mean	1.06793	0.49622	0.48410	0.48852	1.86327	-0.02923	0.48602	0.47027	-0.00034
%RSD	0.08701	0.57366	0.26597	0.04969	0.47181	1.56427	0.09590	0.12916	128.97165

	Pb calc	Se calc
#1	0.46127	1.68983
#2	0.46774	1.71326
Mean	0.46450	1.70155
%RSD	0.98466	0.97382

Method : Paragon2 File : 130311A
SampleId1 : IP130307-3MB SampleId2 :
Analysis commenced : 3/11/2013 12:58:38

Printed : 3/12/2013 13:05:56
[SAMPLE]

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE21

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00000	0.01426	0.00297	-0.00592	-0.00076	-0.00015	-0.00118	-0.07522	-0.00050
#2	-0.00038	0.02022	-0.00390	-0.00598	-0.00102	-0.00017	-0.00258	-0.07803	-0.00032
Mean	-0.00019	0.01724	-0.00047	-0.00595	-0.00089	-0.00016	-0.00188	-0.07663	-0.00041
%RSD	143.36868	24.46519	1044.27139	0.72893	20.28706	11.47475	52.55838	2.59417	30.76279
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00088	-0.00096	-0.00177	0.01015	-0.12401	-0.00290	-0.02917	-0.00075	-0.00128
#2	-0.00115	-0.00074	-0.00253	0.00976	-0.13882	-0.00295	-0.03009	-0.00075	-0.00128
Mean	-0.00102	-0.00085	-0.00215	0.00996	-0.13141	-0.00292	-0.02963	-0.00075	-0.00128
%RSD	18.82802	18.48370	25.19812	2.76470	7.96828	1.19958	2.19587	0.00000	0.00000
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02123	-0.00133	0.00215	-0.00163	-0.00269	-0.00289	0.00063	-0.00436	0.00371
#2	0.01808	-0.00206	0.00694	-0.00340	-0.00188	-0.02154	-0.00227	-0.00682	0.00538
Mean	0.01965	-0.00170	0.00455	-0.00251	-0.00229	-0.01221	-0.00082	-0.00559	0.00454
%RSD	11.33576	30.14866	74.57870	49.78859	24.88300	107.99317	250.79382	31.14438	26.04780
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00889	-0.00319	-0.00426	-0.00274	-0.00286	-0.03131	0.00006	-0.00144	-0.00035
#2	-0.00994	0.00047	-0.00433	-0.00310	-0.00213	-0.01838	-0.00014	-0.00093	-0.00026
Mean	-0.00942	-0.00136	-0.00429	-0.00292	-0.00250	-0.02485	-0.00004	-0.00119	-0.00031
%RSD	7.85162	190.29911	1.08304	8.87563	20.53503	36.80527	339.67694	30.66239	20.55785
	Pb	Se							
	calc	calc							
#1	-0.00234	0.00102							
#2	-0.00239	0.00132							
Mean	-0.00236	0.00117							
%RSD	1.57719	17.93406							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:05:56

SampleId1 : IP130307-3LCS

SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 13:00:15

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE22

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09123	1.93931	0.98764	0.90166	1.00459	0.04865	0.00359	38.70200	0.05036
#2	0.09068	1.93889	0.98205	0.90068	1.00426	0.04863	0.00289	38.75767	0.05011

Mean	0.09095	1.93910	0.98484	0.90117	1.00442	0.04864	0.00324	38.72984	0.05023
%RSD	0.42550	0.01499	0.40121	0.07697	0.02324	0.03529	15.40377	0.10163	0.35525
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.47783	0.19496	0.25468	1.00073	36.79487	0.47406	38.04238	0.48379	0.97445
#2	0.47828	0.19449	0.25394	1.00065	36.89094	0.47513	38.09388	0.48481	0.98112
Mean	0.47806	0.19472	0.25431	1.00069	36.84290	0.47459	38.06813	0.48430	0.97779
%RSD	0.06683	0.17186	0.20544	0.00553	0.18438	0.15882	0.09565	0.14777	0.48274
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	35.41686	0.49778	0.00671	0.48423	0.47054	-0.02900	0.47496	1.74330	1.69235
#2	35.48323	0.49805	0.00945	0.48086	0.47587	-0.01781	0.47580	1.75629	1.71319
Mean	35.45004	0.49791	0.00808	0.48254	0.47320	-0.02340	0.47538	1.74979	1.70277
%RSD	0.13238	0.03735	23.96259	0.49427	0.79563	33.81186	0.12479	0.52502	0.86522
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.08968	0.50371	0.49203	0.49651	1.90183	-0.01533	0.49603	0.48064	-0.00040
#2	1.08543	0.50664	0.49171	0.49644	1.88950	-0.02955	0.49537	0.48425	-0.00076
Mean	1.08756	0.50518	0.49187	0.49647	1.89566	-0.02244	0.49570	0.48244	-0.00058
%RSD	0.27627	0.40978	0.04612	0.00978	0.45962	44.82890	0.09388	0.52880	43.51694
	Pb	Se							
	calc	calc							
#1	0.47510	1.70932							
#2	0.47753	1.72754							
Mean	0.47631	1.71843							
%RSD	0.36048	0.74986							

Method : Paragon2 File : 130311A
SampleId1 : IP130307-4MB SampleId2 :
Analysis commenced : 3/11/2013 13:02:01
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:56
[SAMPLE]

Position : TUBE42

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00069	0.00452	-0.00262	-0.00604	-0.00109	-0.00023	-0.00486	-0.06616	-0.00068
#2	-0.00014	0.00900	0.00484	-0.00635	-0.00109	-0.00026	-0.00171	-0.06663	-0.00035
Mean	-0.00041	0.00676	0.00111	-0.00619	-0.00109	-0.00025	-0.00328	-0.06640	-0.00051
%RSD	95.15096	46.86088	476.11952	3.50031	0.00000	8.51051	67.88763	0.49898	44.92379
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00160	-0.00118	-0.00180	0.01553	-0.15739	-0.00297	-0.03408	-0.00046	-0.00134
#2	-0.00183	-0.00081	-0.00095	0.01584	-0.15833	-0.00299	-0.03285	-0.00040	-0.00097
Mean	-0.00172	-0.00099	-0.00138	0.01568	-0.15786	-0.00298	-0.03347	-0.00043	-0.00116

%RSD	9.29895	26.13235	43.51429	1.40455	0.42116	0.43306	2.59239	9.81717	23.07810
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	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00597	-0.00084	-0.00036	-0.00246	0.00281	-0.00662	-0.00537	-0.01123	0.00300
#2	0.00494	-0.00055	-0.00539	-0.00245	-0.00035	-0.01035	-0.00353	-0.00188	0.00089
Mean	0.00546	-0.00070	-0.00287	-0.00245	0.00123	-0.00848	-0.00445	-0.00656	0.00194
%RSD	13.25403	28.93344	123.57016	0.44602	181.81152	31.09733	29.25612	100.76473	76.84754

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00435	-0.00465	-0.00231	-0.00319	-0.00674	-0.03261	-0.00048	-0.00044	-0.00051
#2	-0.00294	0.00157	-0.00229	-0.00327	-0.00269	-0.03261	-0.00046	-0.00061	-0.00045
Mean	-0.00365	-0.00154	-0.00230	-0.00323	-0.00472	-0.03261	-0.00047	-0.00053	-0.00048
%RSD	27.18698	285.18165	0.57816	1.83921	60.81783	0.00012	4.25052	22.91531	8.68571

	Pb	Se
	calc	calc
#1	0.00106	-0.00174
#2	-0.00105	-0.00004
Mean	0.00000	-0.00089
%RSD	33692.56522	135.77420

Method : Paragon2 File : 130311A
SampleId1 : IP130307-4LCS SampleId2 :
Analysis commenced : 3/11/2013 13:03:35
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:56

[SAMPLE]

Position : TUBE43

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08998	1.92010	0.98368	0.89774	1.01148	0.04855	-0.00218	38.55483	0.05039
#2	0.09058	1.91462	0.97134	0.88909	1.00448	0.04843	-0.00569	38.38166	0.04975
Mean	0.09028	1.91736	0.97751	0.89341	1.00798	0.04849	-0.00394	38.46825	0.05007
%RSD	0.47172	0.20199	0.89267	0.68417	0.49146	0.17652	62.94159	0.31831	0.90686

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.47458	0.19397	0.25508	1.00316	36.10570	0.48435	37.71128	0.48290	0.97684
#2	0.47277	0.19495	0.25526	0.99838	36.00529	0.48303	37.57117	0.48147	0.97426
Mean	0.47368	0.19446	0.25517	1.00077	36.05549	0.48369	37.64122	0.48219	0.97555
%RSD	0.27079	0.35738	0.05128	0.33759	0.19692	0.19345	0.26319	0.20953	0.18715

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	35.54794	0.49557	0.00671	0.47778	0.46687	-0.01035	0.46612	1.70648	1.63291
#2	35.46551	0.48943	0.00055	0.48028	0.47772	-0.01781	0.46622	1.69749	1.67474
Mean	35.50673	0.49250	0.00363	0.47903	0.47229	-0.01408	0.46617	1.70199	1.65383
%RSD	0.16415	0.88111	119.99242	0.36944	1.62483	37.47391	0.01559	0.37343	1.78847

ted: 3/12/2013 13:06:27 User: STEVE WORKMAN

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.12242	0.49859	0.49466	0.49746	1.89198	-0.03279	0.49609	0.47342	-0.00092
#2	1.12240	0.50664	0.49094	0.49539	1.87601	-0.02955	0.49314	0.47325	-0.00076
Mean	1.12241	0.50261	0.49280	0.49642	1.88400	-0.03117	0.49461	0.47334	-0.00084
%RSD	0.00085	1.13296	0.53342	0.29556	0.59947	7.33684	0.42199	0.02566	13.31188

	Pb	Se
	calc	calc
#1	0.47050	1.65741
#2	0.47857	1.68232
Mean	0.47454	1.66986
%RSD	1.20283	1.05471

Method : Paragon2 File : 130311A

SampleId1 : 1303058-1 SampleId2 :

Analysis commenced : 3/11/2013 13:05:20

Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:57

[SAMPLE]

Position : TUBE3

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00142	99.19145	0.08421	0.02916	0.97279	0.00861	0.01243	51.21333	0.00065
#2	-0.00253	99.35732	0.08619	0.02984	0.97224	0.00855	0.01487	51.06154	0.00075
Mean	-0.00198	99.27438	0.08520	0.02950	0.97251	0.00858	0.01365	51.13743	0.00070
%RSD	39.77239	0.11814	1.64434	1.61710	0.04000	0.48673	12.67689	0.20988	10.41970

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.07063	0.08109	0.09758	229.54026	37.57016	0.11061	28.03790	3.04772	0.00890
#2	0.06973	0.08073	0.09712	228.98868	37.58599	0.11024	28.01926	3.04444	0.00777
Mean	0.07018	0.08091	0.09735	229.26447	37.57808	0.11042	28.02858	3.04608	0.00834
%RSD	0.91080	0.31543	0.33556	0.17012	0.02977	0.23548	0.04703	0.07616	9.59764

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.62159	0.10303	3.73992	0.15326	0.14027	6.29681	0.00239	0.07970	0.08548
#2	0.60971	0.10316	3.73092	0.15170	0.14387	6.22186	0.00370	0.07708	0.08301
Mean	0.61565	0.10309	3.73542	0.15248	0.14207	6.25934	0.00305	0.07839	0.08425
%RSD	1.36486	0.09020	0.17036	0.72369	1.79400	0.84663	30.59616	2.36341	2.06949

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	15.60599	0.00302	0.55985	0.31698	-0.02035	0.49558	0.46044	0.51775	0.04352
#2	15.64574	0.01034	0.55887	0.31662	-0.01168	0.48663	0.45827	0.51534	0.04374
Mean	15.62586	0.00668	0.55936	0.31680	-0.01602	0.49110	0.45936	0.51655	0.04363
%RSD	0.17988	77.42279	0.12293	0.08177	38.26363	1.28920	0.33381	0.32930	0.35751

	Pb	Seser: STEVE WORKMAN
	calc	calc
#1	0.14460	0.08355
#2	0.14648	0.08104
Mean	0.14554	0.08230
%RSD	0.91560	2.16272

Method : Paragon2 File : 130311A
SampleId1 : 1303058-1D **SampleId2 :**
Analysis commenced : 3/11/2013 13:07:05
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:57

[SAMPLE]

Position : TUBE4

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00350	99.45266	0.08817	0.02573	0.97833	0.00857	0.00765	50.64219	0.00047
#2	-0.00404	99.97184	0.08363	0.02554	0.98441	0.00862	0.00747	50.83109	-0.00003
Mean	-0.00377	99.71225	0.08590	0.02564	0.98137	0.00859	0.00756	50.73664	0.00022
%RSD	10.15943	0.36817	3.74159	0.50750	0.43865	0.39843	1.67634	0.26326	163.02812

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.06757	0.07953	0.09817	228.90489	37.79638	0.11239	27.93196	3.03259	0.00664
#2	0.06794	0.08045	0.09782	229.98959	37.96329	0.11302	28.03914	3.04966	0.00714
Mean	0.06775	0.07999	0.09800	229.44724	37.87983	0.11271	27.98555	3.04113	0.00689
%RSD	0.38176	0.81832	0.25294	0.33428	0.31159	0.39431	0.27083	0.39696	5.16064

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.57498	0.10265	3.69146	0.14719	0.14972	6.87026	0.00134	0.07060	0.08529
#2	0.57774	0.10130	3.71500	0.14041	0.15185	6.90025	0.00067	0.06961	0.09234
Mean	0.57636	0.10198	3.70323	0.14380	0.15079	6.88526	0.00101	0.07011	0.08881
%RSD	0.33898	0.94226	0.44939	3.33464	0.99628	0.30801	47.05924	0.99598	5.60816

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	11.52555	0.00451	0.55523	0.29449	-0.02345	0.46465	0.45090	0.51758	0.04483
#2	11.59151	0.00158	0.55864	0.29654	-0.02436	0.43794	0.45248	0.51809	0.04527
Mean	11.55853	0.00305	0.55693	0.29552	-0.02391	0.45130	0.45169	0.51784	0.04505
%RSD	0.40358	67.92510	0.43271	0.49130	2.67244	4.18502	0.24794	0.07039	0.68075

	Pb	Se
	calc	calc
#1	0.14888	0.08040
#2	0.14804	0.08477
Mean	0.14846	0.08258
%RSD	0.40068	3.74127

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:05:57

SampleId1 : 1303058-1L 5X SampleId2 :
 Analysis commenced : 3/11/2013 13:08:49
 Dilution ratio : 1.00000 to 1.00000 Tray :

[SAMPLE]
 Position : TUBE5

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00038	19.73472	0.01276	0.00046	0.19964	0.00168	0.00444	10.40670	-0.00022
#2	-0.00053	19.69727	0.01288	0.00083	0.19913	0.00166	0.00883	10.40527	-0.00012
Mean	-0.00045	19.71599	0.01282	0.00064	0.19939	0.00167	0.00664	10.40599	-0.00017
%RSD	23.38257	0.13429	0.64279	40.43066	0.18131	0.86073	46.70155	0.00968	43.03558
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01373	0.01564	0.01816	41.47078	6.26565	0.01669	5.75578	0.62944	0.00111
#2	0.01467	0.01634	0.01862	41.47779	6.25166	0.01668	5.76255	0.62914	0.00136
Mean	0.01420	0.01599	0.01839	41.47428	6.25865	0.01669	5.75917	0.62929	0.00123
%RSD	4.71876	3.12335	1.76428	0.01196	0.15809	0.04424	0.08308	0.03349	14.41886
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.11298	0.02038	0.74587	0.02938	0.02801	1.29954	0.00163	0.01538	0.01384
#2	0.11285	0.02165	0.76647	0.03292	0.02745	1.29580	-0.00194	0.01966	0.01297
Mean	0.11292	0.02101	0.75617	0.03115	0.02773	1.29767	-0.00015	0.01752	0.01341
%RSD	0.07697	4.27777	1.92566	8.02053	1.43675	0.20345	1667.98677	17.24003	4.64101
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	3.25820	-0.00180	0.11306	0.06210	0.00023	0.06530	0.09273	0.10503	0.00819
#2	3.26258	0.00625	0.11285	0.06251	0.00143	0.07758	0.09307	0.10606	0.00852
Mean	3.26039	0.00222	0.11295	0.06230	0.00083	0.07144	0.09290	0.10554	0.00835
%RSD	0.09507	255.99677	0.12950	0.45945	102.17401	12.15986	0.26204	0.68955	2.84475
	Pb calc	Se calc							
#1	0.02847	0.01436							
#2	0.02927	0.01519							
Mean	0.02887	0.01478							
%RSD	1.96123	3.99902							

Method : Paragon2 File : 130311A
 SampleId1 : CCV SampleId2 :
 Analysis commenced : 3/11/2013 13:10:35
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:57
 [CV]
 Position : STD1

Final concentrations

Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
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#1	0.19567	49.96292	0.52382	1.00288	1.02487	0.48958	0.52705	50.64800	0.51415
#2	0.19493	50.08480	0.52289	1.00373	1.02685	0.48971	0.52125	50.63091	0.51301
Mean	0.19530	50.02386	0.52335	1.00330	1.02586	0.48964	0.52415	50.63945	0.51358
%RSD	0.26795	0.17227	0.12591	0.06049	0.13654	0.01939	0.78214	0.02387	0.15801

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48483	0.97576	1.00752	20.13986	49.22907	0.51699	49.43385	0.96463	0.98333
#2	0.48515	0.97640	1.01025	20.16745	49.34420	0.51808	49.46428	0.96637	0.98276
Mean	0.48499	0.97608	1.00888	20.15365	49.28663	0.51754	49.44906	0.96550	0.98304
%RSD	0.04629	0.04662	0.19142	0.09680	0.16518	0.14914	0.04351	0.12694	0.04077

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.28762	1.00498	4.91944	0.98541	0.95201	5.06450	0.49612	1.01680	0.96537
#2	48.34597	1.00564	4.93357	0.98136	0.96424	5.09071	0.49756	1.02273	0.98563
Mean	48.31679	1.00531	4.92650	0.98338	0.95813	5.07760	0.49684	1.01976	0.97550
%RSD	0.08540	0.04625	0.20271	0.29079	0.90234	0.36497	0.20543	0.41075	1.46863

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.86010	1.03478	0.50622	0.49328	0.51647	4.86689	0.48626	0.95493	0.97282
#2	4.86846	1.04210	0.50690	0.49413	0.50958	4.85783	0.48452	0.95700	0.97318
Mean	4.86428	1.03844	0.50656	0.49370	0.51302	4.86236	0.48539	0.95597	0.97300
%RSD	0.12151	0.49846	0.09484	0.12128	0.95021	0.13181	0.25382	0.15279	0.02587

	Pb	Se
	calc	calc
#1	0.96313	0.98250
#2	0.96994	0.99798
Mean	0.96654	0.99024
%RSD	0.49810	1.10585

Method : Paragon2 File : 130311A
SampleId1 : CCB SampleId2 :
Analysis commenced : 3/11/2013 13:12:27
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:57
[CB]

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00098	0.05761	0.00018	-0.00708	-0.00014	0.00021	-0.00031	-0.06210	-0.00043
#2	-0.00069	0.05832	-0.00251	-0.00708	-0.00018	0.00020	-0.00521	-0.06163	-0.00030
Mean	-0.00083	0.05797	-0.00116	-0.00708	-0.00016	0.00020	-0.00276	-0.06187	-0.00037
%RSD	24.59451	0.86385	162.71584	0.00000	16.07614	2.42319	125.76733	0.53551	25.87950

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00066	-0.00068	-0.00105	0.00361	-0.11790	-0.00273	-0.01414	-0.00058	0.00029

#2	-0.00093	-0.00024	-0.00056	0.00369	-0.13200	-0.00275	-0.01046	-0.00063	-0.00116
Mean	-0.00079	-0.00046	-0.00081	0.00365	-0.12495	-0.00274	-0.01230	-0.00061	-0.00043
%RSD	24.19762	67.06530	42.49898	1.50820	7.98151	0.40426	21.15804	6.93054	236.25649

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02380	-0.00110	-0.01520	-0.00368	0.00189	-0.01408	0.00030	-0.00161	0.00432
#2	0.02327	-0.00082	-0.01566	-0.00204	0.00027	-0.00662	-0.00407	-0.00410	0.00511
Mean	0.02354	-0.00096	-0.01543	-0.00286	0.00108	-0.01035	-0.00189	-0.00285	0.00472
%RSD	1.59789	21.00118	2.09232	40.52278	105.87380	50.98373	163.69028	61.68430	11.88521

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00752	-0.00099	-0.00106	-0.00245	-0.00508	-0.03002	-0.00080	0.00059	0.00005
#2	-0.00787	-0.00794	-0.00103	-0.00278	0.00267	-0.04489	-0.00066	-0.00044	0.00007
Mean	-0.00769	-0.00447	-0.00104	-0.00262	-0.00121	-0.03745	-0.00073	0.00007	0.00006
%RSD	3.27522	109.96217	1.90931	9.08643	453.63356	28.07787	13.80556	1024.13289	22.04284

	Pb	Se
	calc	calc
#1	0.00003	0.00235
#2	-0.00050	0.00205
Mean	-0.00023	0.00220
%RSD	161.38959	9.63882

Method : Paragon2 File : 130311A
SampleId1 : 1303058-1MS SampleId2 :
Analysis commenced : 3/11/2013 13:14:17
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:57

[SAMPLE]

Position : TUBE6

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09146	129.68632	1.07029	0.79155	1.99693	0.05723	0.02282	86.42517	0.05254
#2	0.09082	129.43268	1.06936	0.78401	1.99092	0.05706	0.00985	85.94336	0.05199
Mean	0.09114	129.55950	1.06982	0.78778	1.99392	0.05714	0.01634	86.18427	0.05227
%RSD	0.49891	0.13843	0.06155	0.67689	0.21316	0.20482	56.11750	0.39531	0.73850

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.54296	0.28251	0.35853	226.01594	81.95892	0.65917	68.54826	3.28447	0.87024
#2	0.54033	0.28064	0.35741	224.88883	81.85306	0.65813	68.25253	3.27498	0.86671
Mean	0.54164	0.28157	0.35797	225.45238	81.90599	0.65865	68.40039	3.27972	0.86847
%RSD	0.34324	0.46887	0.22113	0.35350	0.09139	0.11175	0.30572	0.20472	0.28707

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	40.54914	0.60728	3.59203	0.63608	0.59014	6.24809	0.30331	1.83329	1.73440
#2	40.49491	0.59613	3.57289	0.62478	0.60298	6.27807	0.28957	1.81917	1.78082

Mean	40.52203	0.60171	3.58246	0.63043	0.59656	6.26308	0.29644	1.82623	1.75761
%RSD	0.09463	1.31103	0.37788	1.26686	1.52218	0.33845	3.27704	0.54693	1.86747
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	11.12844	0.51490	1.05751	0.63233	1.89161	0.47746	0.96591	0.97748	0.04162
#2	11.11050	0.51087	1.05321	0.63151	1.89246	0.46797	0.96129	0.96750	0.04109
Mean	11.11947	0.51289	1.05536	0.63192	1.89203	0.47272	0.96360	0.97249	0.04136
%RSD	0.11407	0.55484	0.28782	0.09130	0.03186	1.42050	0.33939	0.72601	0.89241
	Pb	Se							
	calc	calc							
#1	0.60544	1.76733							
#2	0.61024	1.79359							
Mean	0.60784	1.78046							
%RSD	0.55891	1.04281							

Method : Paragon2 File : 130311A
SampleId1 : 1303058-1MSD SampleId2 :
Analysis commenced : 3/11/2013 13:16:02
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:58

[SAMPLE]

Position : TUBE7

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08873	126.65181	1.05097	0.76960	1.94881	0.05605	0.01317	86.45019	0.05061
#2	0.08761	125.65002	1.02780	0.76506	1.93923	0.05580	0.01946	86.07685	0.05052
Mean	0.08817	126.15092	1.03938	0.76733	1.94402	0.05592	0.01631	86.26352	0.05057
%RSD	0.89533	0.56153	1.57598	0.41809	0.34865	0.32156	27.26998	0.30603	0.12356
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.52933	0.27598	0.35318	220.50166	80.35575	0.64545	67.19516	3.27899	0.84468
#2	0.52602	0.27480	0.34932	219.67908	79.82314	0.64108	66.88791	3.26901	0.84700
Mean	0.52768	0.27539	0.35125	220.09037	80.08944	0.64327	67.04153	3.27400	0.84584
%RSD	0.44357	0.30264	0.77654	0.26428	0.47024	0.48003	0.32407	0.21559	0.19474
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	39.62871	0.59247	3.49978	0.61620	0.58443	6.40548	0.28873	1.77032	1.69581
#2	39.37696	0.58745	3.50162	0.61511	0.59645	6.36801	0.28387	1.75718	1.72902
Mean	39.50284	0.58996	3.50070	0.61566	0.59044	6.38675	0.28630	1.76375	1.71242
%RSD	0.45064	0.60158	0.03726	0.12494	1.43919	0.41491	1.20017	0.52695	1.37162
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	10.58129	0.49551	1.05219	0.62860	1.85778	0.47264	0.94702	0.94908	0.03969
#2	10.50534	0.49405	1.04597	0.62672	1.82575	0.47344	0.94150	0.94650	0.03932
Mean	10.54331	0.49478	1.04908	0.62766	1.84177	0.47304	0.94426	0.94779	0.03951

%RSD	0.50934	0.20888	0.41927	0.21133	1.22998	0.11891	0.41274	0.19263	0.64879
	Pb	Se							
	calc	calc							
#1	0.59501	1.72062							
#2	0.60267	1.73840							
Mean	0.59884	1.72951							
%RSD	0.90371	0.72688							

Method : Paragon2 File : 130311A
SampleId1 : 1303058-2 **SampleId2 :**
Analysis commenced : 3/11/2013 13:17:49
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:58
[SAMPLE]
Position : TUBE8

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00171	55.54640	0.06626	0.01745	1.22325	0.00567	0.00829	89.61076	-0.00019
#2	-0.00207	55.21659	0.06346	0.01751	1.21928	0.00562	0.00618	89.25695	-0.00016
Mean	-0.00189	55.38150	0.06486	0.01748	1.22127	0.00565	0.00724	89.43386	-0.00017
%RSD	13.64933	0.42110	3.04937	0.24811	0.22963	0.65100	20.58072	0.27973	13.71444

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03735	0.04213	0.04836	137.31995	15.89778	0.06113	18.04580	1.62608	0.00406
#2	0.03712	0.04175	0.04771	136.93790	15.82305	0.06089	17.98703	1.62115	0.00494
Mean	0.03724	0.04194	0.04803	137.12892	15.86041	0.06101	18.01641	1.62362	0.00450
%RSD	0.43839	0.63807	0.95361	0.19700	0.33316	0.27818	0.23064	0.21456	13.82305

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.24707	0.05910	2.17170	0.09581	0.09006	6.83652	0.00072	0.09183	0.08091
#2	0.24494	0.06018	2.18571	0.09825	0.09519	6.82528	0.00178	0.07876	0.08640
Mean	0.24600	0.05964	2.17871	0.09703	0.09262	6.83090	0.00125	0.08529	0.08365
%RSD	0.61350	1.27326	0.45484	1.78409	3.91966	0.11642	60.34167	10.83502	4.64180

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	14.68498	0.00498	0.35565	0.21113	-0.01046	0.67264	0.61275	0.27044	0.02609
#2	14.61725	0.00351	0.35409	0.21081	-0.01710	0.66107	0.61002	0.26787	0.02631
Mean	14.65112	0.00424	0.35487	0.21097	-0.01378	0.66686	0.61139	0.26916	0.02620
%RSD	0.32688	24.36900	0.31170	0.10748	34.06092	1.22699	0.31652	0.67643	0.59561

	Pb	Se							
	calc	calc							
#1	0.09197	0.08454							
#2	0.09621	0.08385							
Mean	0.09409	0.08420							
%RSD	3.18630	0.57886							

ted: 3/12/2013 13:06:27 User: STEVE WORKMAN
 Method : Paragon2 File : 130311A
 SampleId1 : 1303058-3 SampleId2 :
 Analysis commenced : 3/11/2013 13:19:35
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:58
 [SAMPLE]
 Position : TUBE9

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00185	70.03940	0.06521	0.01910	2.11184	0.00564	0.00573	103.58580	-0.00011
#2	-0.00154	69.28343	0.06253	0.01874	2.09191	0.00561	0.01151	102.85479	-0.00019
Mean	-0.00170	69.66141	0.06387	0.01892	2.10187	0.00562	0.00862	103.22030	-0.00015
%RSD	13.16366	0.76735	2.96764	1.37527	0.67031	0.30493	47.39195	0.50077	38.65651
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.03904	0.05521	0.05920	150.99499	18.36243	0.08728	25.63007	1.86146	0.00211
#2	0.03969	0.05466	0.05843	149.95829	18.18622	0.08644	25.42741	1.84882	0.00205
Mean	0.03936	0.05494	0.05882	150.47664	18.27432	0.08686	25.52874	1.85514	0.00208
%RSD	1.17564	0.70797	0.92160	0.48716	0.68184	0.68376	0.56132	0.48180	2.13523
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.28879	0.07212	2.72143	0.09531	0.08655	5.37903	0.00064	0.07637	0.08342
#2	0.28612	0.07212	2.70969	0.09352	0.08694	5.34158	0.00447	0.08010	0.08123
Mean	0.28745	0.07212	2.71556	0.09441	0.08674	5.36030	0.00255	0.07823	0.08232
%RSD	0.65669	0.00000	0.30556	1.33717	0.32023	0.49399	106.17371	3.36615	1.88122
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	9.85560	0.00602	0.39006	0.26001	-0.02248	0.46387	0.47535	0.26752	0.02874
#2	9.77280	0.00163	0.38666	0.25792	-0.01571	0.47764	0.47194	0.26701	0.02890
Mean	9.81420	0.00382	0.38836	0.25896	-0.01909	0.47076	0.47365	0.26727	0.02882
%RSD	0.59657	81.14536	0.61959	0.57113	25.07197	2.06802	0.50875	0.13624	0.40255
	Pb calc	Se calc							
#1	0.08946	0.08107							
#2	0.08913	0.08085							
Mean	0.08930	0.08096							
%RSD	0.26329	0.19271							

Method : Paragon2 File : 130311A
 SampleId1 : 1303058-4 SampleId2 :
 Analysis commenced : 3/11/2013 13:21:19
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:58
 [SAMPLE]
 Position : TUBE10

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00248	78.39235	0.07430	0.01996	0.91137	0.00808	0.01608	130.88497	0.00023
#2	-0.00179	77.74484	0.07267	0.01874	0.90309	0.00803	0.00995	130.24911	0.00052
Mean	-0.00213	78.06859	0.07349	0.01935	0.90723	0.00805	0.01301	130.56704	0.00038
%RSD	22.85392	0.58649	1.57002	4.48253	0.64575	0.40015	33.30668	0.34436	53.82232
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.05444	0.06065	0.07627	208.47831	26.01313	0.10538	25.96776	2.16069	0.00488
#2	0.05506	0.06080	0.07550	207.55633	25.82417	0.10472	25.84950	2.14868	0.00412
Mean	0.05475	0.06073	0.07588	208.01732	25.91865	0.10505	25.90863	2.15468	0.00450
%RSD	0.80603	0.16913	0.71427	0.31341	0.51552	0.44942	0.32276	0.39403	11.84833
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.57510	0.08190	3.36329	0.13198	0.12123	12.62172	0.00611	0.16570	0.17462
#2	0.57081	0.08146	3.33586	0.13523	0.12195	12.58408	0.00505	0.17287	0.17465
Mean	0.57296	0.08168	3.34957	0.13360	0.12159	12.60290	0.00558	0.16929	0.17463
%RSD	0.52927	0.37948	0.57906	1.71758	0.41750	0.21121	13.46052	2.99203	0.01253
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	10.19682	0.01114	0.56779	0.26050	-0.02067	1.01676	1.07417	0.38204	0.04158
#2	10.12426	0.00565	0.56283	0.25910	-0.02410	1.03051	1.06924	0.38084	0.04155
Mean	10.16054	0.00840	0.56531	0.25980	-0.02239	1.02363	1.07170	0.38144	0.04157
%RSD	0.50492	46.20568	0.62001	0.38022	10.83290	0.94970	0.32533	0.22285	0.04447
	Pb calc	Se calc							
#1	0.12481	0.17165							
#2	0.12637	0.17406							
Mean	0.12559	0.17285							
%RSD	0.87805	0.98423							

Method : Paragon2 File : 130311A
SampleId1 : 1303058-5 SampleId2 :
Analysis commenced : 3/11/2013 13:23:04
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:58

[SAMPLE]

Position : TUBE11

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00112	64.88586	0.06218	0.01463	1.78840	0.00642	0.00708	81.66859	0.00036
#2	-0.00088	64.89268	0.06160	0.01536	1.79278	0.00643	0.01076	81.83875	0.00061
Mean	-0.00100	64.88927	0.06189	0.01499	1.79059	0.00643	0.00892	81.75367	0.00049
%RSD	17.05812	0.00744	0.66579	3.47054	0.17310	0.12361	29.14869	0.14718	36.52536
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo

	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04365	0.05312	0.06569	159.35215	17.28098	0.07793	21.63283	2.06907	0.00500
#2	0.04393	0.05327	0.06637	159.86811	17.26196	0.07796	21.69046	2.07510	0.00563
Mean	0.04379	0.05319	0.06603	159.61013	17.27147	0.07794	21.66164	2.07208	0.00532
%RSD	0.44540	0.19138	0.71932	0.22858	0.07786	0.03077	0.18810	0.20576	8.35668

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.28271	0.07022	3.36513	0.13001	0.11513	15.82145	0.00279	0.27589	0.27019
#2	0.28230	0.06998	3.39810	0.12784	0.11707	15.84409	0.00609	0.29693	0.27636
Mean	0.28250	0.07010	3.38161	0.12892	0.11610	15.83277	0.00444	0.28641	0.27328
%RSD	0.10279	0.24320	0.68931	1.19086	1.18403	0.10111	52.48491	5.19326	1.59699

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	7.23436	0.00422	0.29088	0.23560	-0.01227	1.04634	0.91224	0.31388	0.03518
#2	7.24924	0.00202	0.29164	0.23631	-0.02001	1.03331	0.91280	0.31645	0.03531
Mean	7.24180	0.00312	0.29126	0.23595	-0.01614	1.03983	0.91252	0.31516	0.03525
%RSD	0.14528	49.79005	0.18292	0.21277	33.91499	0.88594	0.04323	0.57779	0.25290

	Pb calc	Se calc
#1	0.12008	0.27209
#2	0.12066	0.28321
Mean	0.12037	0.27765
%RSD	0.33700	2.83234

Method : Paragon2 File : 130311A
SampleId1 : 1303058-6 SampleId2 :
Analysis commenced : 3/11/2013 13:24:50
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:59
[SAMPLE]

Position : TUBE12

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00145	50.96225	0.07570	0.01101	0.60866	0.00758	0.01006	62.78617	0.00037
#2	-0.00111	51.17455	0.08130	0.00843	0.60910	0.00756	0.01146	62.79323	0.00027
Mean	-0.00128	51.06840	0.07850	0.00972	0.60888	0.00757	0.01076	62.78970	0.00032
%RSD	18.38237	0.29396	5.03924	18.73793	0.05100	0.14933	9.20278	0.00796	21.23264

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.04314	0.04421	0.05172	181.96974	15.49276	0.06866	16.54004	1.73097	0.00601
#2	0.04323	0.04342	0.05201	182.10322	15.53118	0.06883	16.54900	1.73397	0.00664
Mean	0.04319	0.04382	0.05187	182.03648	15.51197	0.06874	16.54452	1.73247	0.00632
%RSD	0.14783	1.27016	0.39454	0.05185	0.17517	0.17711	0.03831	0.12272	7.02781

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
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#1	0.34286	0.05957	2.57650	0.16068	0.14595	15.47436	0.00623	0.31495	0.29650
#2	0.34368	0.05840	2.58455	0.15813	0.14983	15.44795	0.00427	0.30312	0.29723
Mean	0.34327	0.05898	2.58052	0.15941	0.14789	15.46116	0.00525	0.30904	0.29686
%RSD	0.16934	1.39255	0.22059	1.13123	1.85574	0.12076	26.42032	2.70874	0.17326

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	6.41038	0.00710	0.32926	0.27313	-0.02206	2.92384	1.79504	0.32126	0.02144
#2	6.42796	0.00600	0.32945	0.27348	-0.02249	2.91670	1.79787	0.32057	0.02087
Mean	6.41917	0.00655	0.32935	0.27330	-0.02227	2.92027	1.79646	0.32091	0.02116
%RSD	0.19368	11.85164	0.04046	0.08887	1.33947	0.17289	0.11142	0.15132	1.89893

	Pb	Se
	calc	calc
#1	0.15086	0.30264
#2	0.15260	0.29919
Mean	0.15173	0.30092
%RSD	0.81073	0.81234

Method : Paragon2 File : 130311A
SampleId1 : 1303058-7 **SampleId2 :**
Analysis commenced : 3/11/2013 13:26:36
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:59
[SAMPLE]

Position : TUBE13

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00003	54.55774	0.07034	0.01720	0.75472	0.00631	0.01488	85.16913	0.00036
#2	-0.00105	54.92144	0.07151	0.01328	0.76105	0.00632	0.01138	85.58608	0.00046
Mean	-0.00054	54.73959	0.07092	0.01524	0.75788	0.00631	0.01313	85.37760	0.00041
%RSD	132.71962	0.46981	1.16199	18.21161	0.59123	0.10507	18.87441	0.34532	16.18390

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04397	0.04191	0.04732	144.19703	13.26932	0.06910	18.36037	1.51251	0.00526
#2	0.04366	0.04069	0.04677	145.14756	13.36127	0.06967	18.43833	1.52320	0.00412
Mean	0.04382	0.04130	0.04704	144.67229	13.31530	0.06939	18.39935	1.51786	0.00469
%RSD	0.50064	2.10115	0.82991	0.46459	0.48831	0.58226	0.29959	0.49780	17.05794

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.36000	0.06217	2.06512	0.10846	0.08198	8.52075	0.00864	0.13238	0.11829
#2	0.36234	0.06233	2.05088	0.10012	0.08850	8.61458	0.00549	0.12550	0.12488
Mean	0.36117	0.06225	2.05800	0.10429	0.08524	8.56766	0.00706	0.12894	0.12158
%RSD	0.45881	0.17427	0.48924	5.65665	5.40954	0.77445	31.56502	3.77653	3.82949

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	8.17544	0.00134	0.39568	0.19063	-0.00959	1.25475	0.93199	0.26804	0.02924

#2	8.23400	0.00573	0.39849	0.19192	-0.01199	1.24164	0.93779	0.26941	0.02898
Mean	8.20472	0.00354	0.39709	0.19127	-0.01079	1.24819	0.93489	0.26873	0.02911
%RSD	0.50470	87.75181	0.50027	0.47703	15.74739	0.74252	0.43845	0.36134	0.62826
	Pb	Se							
	calc	calc							
#1	0.09080	0.12298							
#2	0.09237	0.12508							
Mean	0.09158	0.12403							
%RSD	1.21314	1.19652							

Method : Paragon2 File : 130311A
SampleId1 : 1303058-8 SampleId2 :
Analysis commenced : 3/11/2013 13:28:21
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:59
[SAMPLE]

Position : TUBE14

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00077	54.39582	0.06241	0.01260	1.11036	0.00563	0.01059	96.09224	0.00017
#2	-0.00165	54.32232	0.06230	0.01260	1.11102	0.00561	0.01129	96.01433	0.00010
Mean	-0.00121	54.35907	0.06236	0.01260	1.11069	0.00562	0.01094	96.05328	0.00013
%RSD	51.26509	0.09561	0.13216	0.00000	0.04206	0.28361	4.52816	0.05735	37.91159
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04127	0.04435	0.04748	128.60555	15.11388	0.06885	19.00235	1.60800	0.00224
#2	0.04050	0.04418	0.04796	128.63775	15.10836	0.06880	18.98656	1.60854	0.00117
Mean	0.04088	0.04426	0.04772	128.62165	15.11112	0.06883	18.99446	1.60827	0.00170
%RSD	1.33068	0.26654	0.71243	0.01770	0.02583	0.05360	0.05875	0.02377	44.33085
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.23566	0.06739	2.22730	0.09394	0.08074	6.48418	0.00489	0.15876	0.15331
#2	0.23505	0.06616	2.24224	0.09110	0.08396	6.53291	0.00397	0.14363	0.15385
Mean	0.23535	0.06678	2.23477	0.09252	0.08235	6.50855	0.00443	0.15119	0.15358
%RSD	0.18495	1.29969	0.47258	2.16814	2.76983	0.52933	14.79464	7.07796	0.24599
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	9.23964	0.01083	0.30195	0.20803	-0.01794	0.79709	0.74106	0.25894	0.02588
#2	9.23079	0.00095	0.30201	0.20896	-0.02033	0.78674	0.74282	0.25860	0.02584
Mean	9.23521	0.00589	0.30198	0.20849	-0.01914	0.79192	0.74194	0.25877	0.02586
%RSD	0.06774	118.51095	0.01323	0.31591	8.80682	0.92444	0.16708	0.09381	0.10396
	Pb	Se							
	calc	calc							
#1	0.08513	0.15513							
#2	0.08634	0.15044							

Mean 0.08574 0.15278ser: STEVE WORKMAN
%RSD 0.99537 2.16747

Method : Paragon2 File : 130311A
SampleId1 : 1303058-9 SampleId2 :
Analysis commenced : 3/11/2013 13:30:05
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:05:59
[SAMPLE]

Position : TUBE15

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00132	24.94497	0.13176	0.00966	0.49250	0.01298	0.00402	333.20929	-0.00060
#2	-0.00297	24.85941	0.12780	0.00948	0.49195	0.01297	-0.00037	331.90696	-0.00058
Mean	-0.00215	24.90219	0.12978	0.00957	0.49222	0.01297	0.00183	332.55813	-0.00059
%RSD	54.45651	0.24295	2.15892	1.35987	0.07882	0.09205	169.66804	0.27691	1.51433
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01862	0.01281	0.01755	69.40953	6.17506	0.02934	7.33816	5.43458	0.24630
#2	0.01767	0.01200	0.01673	69.26960	6.15134	0.02928	7.30000	5.42604	0.24592
Mean	0.01814	0.01241	0.01714	69.33956	6.16320	0.02931	7.31908	5.43031	0.24611
%RSD	3.69791	4.61856	3.37636	0.14270	0.27206	0.15112	0.36872	0.11119	0.10841
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.16093	0.02268	1.36396	0.21492	0.21338	18.85836	0.00384	0.21871	0.21086
#2	0.16043	0.02250	1.35731	0.21396	0.21602	18.72224	-0.00155	0.22033	0.20978
Mean	0.16068	0.02259	1.36063	0.21444	0.21470	18.79030	0.00114	0.21952	0.21032
%RSD	0.21650	0.54882	0.34543	0.31729	0.86673	0.51225	333.39307	0.52246	0.36321
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	11.42293	0.00944	0.53420	0.14464	-0.01637	23.13570	0.90754	0.38496	0.03411
#2	11.40248	0.00249	0.53347	0.14411	-0.02587	23.10588	0.90563	0.38393	0.03357
Mean	11.41271	0.00597	0.53383	0.14437	-0.02112	23.12079	0.90658	0.38445	0.03384
%RSD	0.12671	82.33823	0.09627	0.25807	31.81915	0.09118	0.14942	0.18952	1.13102
	Pb calc	Se calc							
#1	0.21390	0.21347							
#2	0.21533	0.21329							
Mean	0.21461	0.21338							
%RSD	0.47276	0.05980							

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 13:32:22
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:00
[CV]

Position : STD1

Final concentrations6:27 User: STEVE WORKMAN

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.19167	48.94434	0.51962	0.98626	1.00517	0.47385	0.52800	49.29568	0.51072
#2	0.19119	49.05387	0.50867	0.98246	1.00932	0.47549	0.52979	49.34589	0.51098
Mean	0.19143	48.99910	0.51415	0.98436	1.00725	0.47467	0.52890	49.32078	0.51085
%RSD	0.17737	0.15807	1.50588	0.27304	0.29097	0.24319	0.23804	0.07199	0.03667
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.47291	0.94911	0.99382	19.42418	48.81958	0.50938	48.06852	0.93607	0.96135
#2	0.47530	0.95195	0.99973	19.49582	48.87599	0.51043	48.15066	0.93876	0.96299
Mean	0.47410	0.95053	0.99677	19.46000	48.84778	0.50991	48.10959	0.93741	0.96217
%RSD	0.35760	0.21089	0.41910	0.26031	0.08165	0.14598	0.12072	0.20283	0.12033
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	47.99504	1.00049	4.74075	0.95784	0.91845	4.87732	0.48767	0.98553	0.92654
#2	48.04471	0.99545	4.78125	0.95408	0.93652	4.88480	0.48750	0.99450	0.95586
Mean	48.01987	0.99797	4.76100	0.95596	0.92749	4.88106	0.48758	0.99002	0.94120
%RSD	0.07315	0.35719	0.60150	0.27818	1.37801	0.10846	0.02418	0.64085	2.20281
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.71968	1.01431	0.49757	0.47414	0.49544	4.76608	0.47375	0.91930	0.95254
#2	4.73355	1.01540	0.49950	0.47624	0.50106	4.77253	0.47542	0.92240	0.95512
Mean	4.72662	1.01485	0.49853	0.47519	0.49825	4.76931	0.47459	0.92085	0.95383
%RSD	0.20758	0.07634	0.27302	0.31332	0.79810	0.09574	0.24904	0.23790	0.19122
	Pb calc	Se calc							
#1	0.93157	0.94618							
#2	0.94237	0.96873							
Mean	0.93697	0.95745							
%RSD	0.81532	1.66499							

Method : Paragon2 File : 130311A
SampleId1 : CCB SampleId2 :
Analysis commenced : 3/11/2013 13:34:13
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:00
[CB]
Position : STD2

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00047	0.08852	-0.00589	-0.00531	0.00011	0.00037	0.00145	-0.04055	-0.00015
#2	0.00004	0.08395	-0.00064	-0.00598	0.00011	0.00032	-0.00240	-0.04664	-0.00005
Mean	-0.00022	0.08623	-0.00326	-0.00564	0.00011	0.00035	-0.00048	-0.04359	-0.00010
%RSD	168.58951	3.74835	113.66253	8.45396	0.00000	11.62839	567.85976	9.88004	67.62229

ted: 3/12/2013 13:06:27 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00070	-0.00032	-0.00181	0.01381	-0.10332	-0.00256	-0.00095	-0.00016	-0.00002
#2	-0.00120	-0.00012	-0.00115	0.01171	-0.10873	-0.00260	0.00304	-0.00028	-0.00053
Mean	-0.00095	-0.00022	-0.00148	0.01276	-0.10603	-0.00258	0.00104	-0.00022	-0.00028
%RSD	37.07509	63.24745	31.59311	11.65000	3.60572	1.21548	270.69661	38.19361	129.03941

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03387	-0.00093	-0.01246	-0.00220	0.00275	-0.01408	-0.00116	0.01201	0.00450
#2	0.03064	-0.00077	-0.01246	-0.00015	0.00122	-0.01035	-0.00222	0.00073	0.00089
Mean	0.03225	-0.00085	-0.01246	-0.00117	0.00199	-0.01221	-0.00169	0.00637	0.00269
%RSD	7.08722	12.76669	0.00000	123.63908	54.77299	21.59858	44.35088	125.10496	94.82586

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00688	0.00157	-0.00091	-0.00262	-0.00173	-0.01967	-0.00029	0.00059	0.00040
#2	-0.00650	0.00047	-0.00092	-0.00259	-0.00638	-0.02291	-0.00017	-0.00010	0.00009
Mean	-0.00669	0.00102	-0.00091	-0.00260	-0.00406	-0.02129	-0.00023	0.00024	0.00025
%RSD	3.97389	76.23302	0.72819	1.03709	81.13163	10.73682	35.30153	199.99284	87.97894

	Pb	Se
	calc	calc
#1	0.00111	0.00700
#2	0.00076	0.00084
Mean	0.00093	0.00392
%RSD	25.99382	111.22240

Method : Paragon2 File : 130311A
 SampleId1 : 1303058-10 SampleId2 :
 Analysis commenced : 3/11/2013 13:36:14
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:00

[SAMPLE]

Position : TUBE16

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00183	17.25715	0.13024	0.00972	0.30572	0.01235	0.00269	358.04006	-0.00085
#2	-0.00203	17.26847	0.13001	0.00831	0.30543	0.01238	0.00427	357.77370	-0.00051
Mean	-0.00193	17.26281	0.13013	0.00902	0.30558	0.01237	0.00348	357.90688	-0.00068
%RSD	7.02856	0.04636	0.12665	11.06404	0.06764	0.13095	32.05926	0.05262	34.95877

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01571	0.00504	0.00990	65.12904	4.11400	0.02087	5.02237	5.70277	0.33038
#2	0.01598	0.00496	0.00980	65.13482	4.12913	0.02082	5.02083	5.70649	0.32837
Mean	0.01584	0.00500	0.00985	65.13193	4.12157	0.02084	5.02160	5.70463	0.32937
%RSD	1.21458	1.18494	0.74387	0.00627	0.25963	0.17708	0.02165	0.04611	0.43208

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.15515	0.01466	1.21180	0.19983	0.19777	25.24064	0.00100	0.27204	0.25598
#2	0.15457	0.01347	1.22921	0.19775	0.20307	25.31281	0.00113	0.27879	0.26145
Mean	0.15486	0.01406	1.22050	0.19879	0.20042	25.27673	0.00107	0.27542	0.25871
%RSD	0.26205	5.95014	1.00881	0.73723	1.87255	0.20190	8.08711	1.73275	1.49596

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	7.87983	0.00694	0.54751	0.09341	-0.01385	23.83253	0.89513	0.26718	0.04108
#2	7.89938	0.00950	0.54786	0.09277	-0.00966	23.84226	0.89433	0.26838	0.04077
Mean	7.88961	0.00822	0.54768	0.09309	-0.01175	23.83740	0.89473	0.26778	0.04093
%RSD	0.17522	22.02636	0.04510	0.48733	25.18987	0.02886	0.06326	0.31728	0.53705

	Pb calc	Se calc
#1	0.19845	0.26133
#2	0.20130	0.26723
Mean	0.19988	0.26428
%RSD	1.00823	1.57813

Method : Paragon2 File : 130311A
SampleId1 : 1303058-11 SampleId2 :
Analysis commenced : 3/11/2013 13:37:58
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:00
[SAMPLE]

Position : TUBE17

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00086	62.64417	0.07698	0.01499	1.99162	0.00480	0.01787	77.10149	0.00036
#2	-0.00142	62.94305	0.08118	0.01181	2.00065	0.00480	0.01000	77.24810	0.00039
Mean	-0.00114	62.79361	0.07908	0.01340	1.99614	0.00480	0.01394	77.17480	0.00038
%RSD	34.61003	0.33656	3.75157	16.82862	0.32005	0.09496	39.96376	0.13433	5.53143

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.03233	0.04490	0.04372	136.97109	11.98655	0.06781	17.94249	2.00668	0.00387
#2	0.03243	0.04494	0.04372	137.48156	12.02408	0.06805	17.99724	2.01210	0.00356
Mean	0.03238	0.04492	0.04372	137.22633	12.00532	0.06793	17.96986	2.00939	0.00372
%RSD	0.21799	0.05953	0.00189	0.26304	0.22104	0.24441	0.21541	0.19087	5.98068

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.18889	0.05531	2.07476	0.08475	0.07134	5.90340	0.00225	0.11522	0.11726
#2	0.18988	0.05492	2.09199	0.08226	0.07361	5.92962	-0.00065	0.10697	0.11875
Mean	0.18938	0.05512	2.08338	0.08350	0.07248	5.91651	0.00080	0.11109	0.11800
%RSD	0.36752	0.50614	0.58465	2.10809	2.22042	0.31341	255.62659	5.24918	0.89329

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	10.90354	0.00166	0.25192	0.23040	-0.01614	0.40627	0.41081	0.20522	0.02366
#2	10.96405	0.00532	0.25312	0.23192	-0.01350	0.40747	0.41114	0.20643	0.02346
Mean	10.93379	0.00349	0.25252	0.23116	-0.01482	0.40687	0.41098	0.20582	0.02356
%RSD	0.39127	74.08811	0.33746	0.46706	12.60976	0.20873	0.05644	0.41269	0.59894

	Pb calc	Se calc
#1	0.07580	0.11658
#2	0.07649	0.11483
Mean	0.07615	0.11570
%RSD	0.63980	1.07072

Method : Paragon2 File : 130311A
SampleId1 : 1303058-12 SampleId2 :
Analysis commenced : 3/11/2013 13:39:43
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:00

[SAMPLE]

Position : TUBE18

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00177	35.14642	0.03864	0.00739	0.70172	0.00309	0.00535	61.83782	-0.00006
#2	-0.00209	35.22771	0.03864	0.00856	0.70289	0.00307	0.00203	61.89698	-0.00006
Mean	-0.00193	35.18707	0.03864	0.00797	0.70231	0.00308	0.00369	61.86740	-0.00006
%RSD	11.74585	0.16335	0.00000	10.33513	0.11798	0.48163	63.72638	0.06761	0.00000

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.03219	0.02354	0.03301	101.48339	7.00858	0.05215	17.15830	1.30846	0.00299
#2	0.03224	0.02279	0.03368	101.69677	7.00431	0.05226	17.18179	1.31140	0.00312
Mean	0.03221	0.02316	0.03334	101.59008	7.00644	0.05220	17.17004	1.30993	0.00306
%RSD	0.10010	2.28461	1.41243	0.14852	0.04313	0.14845	0.09677	0.15852	2.90894

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.12609	0.04122	2.45140	0.08011	0.06970	1.80367	0.00139	0.03053	0.03237
#2	0.12597	0.04192	2.45048	0.07828	0.07261	1.77379	0.00180	0.02791	0.03214
Mean	0.12603	0.04157	2.45094	0.07920	0.07115	1.78873	0.00159	0.02922	0.03225
%RSD	0.06897	1.19297	0.02653	1.63677	2.89331	1.18119	18.07987	6.33567	0.50540

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.29190	-0.00227	0.20900	0.14846	-0.01965	0.09195	0.10607	0.20608	0.01419
#2	4.30345	0.00066	0.20902	0.14905	-0.00833	0.08479	0.10456	0.20591	0.01411
Mean	4.29767	-0.00080	0.20901	0.14876	-0.01399	0.08837	0.10532	0.20600	0.01415
%RSD	0.18989	257.24776	0.00637	0.27950	57.22110	5.72262	1.01027	0.05891	0.40709

	Pb calc	Se calc
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#1	0.07316	0.03176	ser: STEVE WORKMAN
#2	0.07450	0.03073	
Mean	0.07383	0.03124	
%RSD	1.27517	2.32105	

Method : Paragon2 File : 130311A
SampleId1 : 1303058-13 SampleId2 :
Analysis commenced : 3/11/2013 13:41:28
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:00
[SAMPLE]

Position : TUBE19

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00085	54.91012	0.05787	0.01677	0.74472	0.00515	0.00325	120.43322	0.00029
#2	-0.00173	54.97770	0.05076	0.01549	0.74827	0.00517	0.00097	120.60163	-0.00013
Mean	-0.00129	54.94391	0.05431	0.01613	0.74649	0.00516	0.00211	120.51742	0.00008
%RSD	47.73814	0.08697	9.25571	5.64622	0.33654	0.30348	76.52780	0.09881	367.18416

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.04104	0.03922	0.04033	139.12998	14.58622	0.07113	19.97262	1.50171	0.00142
#2	0.04108	0.03918	0.03931	139.54400	14.58527	0.07113	20.00637	1.50663	0.00199
Mean	0.04106	0.03920	0.03982	139.33699	14.58574	0.07113	19.98949	1.50417	0.00170
%RSD	0.08209	0.08165	1.80664	0.21011	0.00465	0.00259	0.11936	0.23138	23.46928

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.29828	0.06031	2.00219	0.09681	0.08066	1.84476	0.00510	0.01791	0.00783
#2	0.29791	0.05952	2.02516	0.09116	0.08303	1.79994	0.00286	0.00168	0.00965
Mean	0.29809	0.05992	2.01368	0.09399	0.08185	1.82235	0.00398	0.00979	0.00874
%RSD	0.08769	0.93118	0.80636	4.24753	2.04091	1.73914	39.77437	117.19613	14.78067

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	10.56885	0.00569	0.45144	0.22601	-0.01593	0.12070	0.10455	0.26049	0.02519
#2	10.60558	0.00349	0.45304	0.22721	-0.01943	0.10187	0.10377	0.26255	0.02515
Mean	10.58721	0.00459	0.45224	0.22661	-0.01768	0.11129	0.10416	0.26152	0.02517
%RSD	0.24535	33.81657	0.25071	0.37163	13.99699	11.96301	0.52891	0.55693	0.10276

	Pb calc	Se calc
#1	0.08604	0.01118
#2	0.08574	0.00700
Mean	0.08589	0.00909
%RSD	0.25056	32.57116

Method : Paragon2 File : 130311A
SampleId1 : 1303058-14 SampleId2 :
Analysis commenced : 3/11/2013 13:43:13

Printed : 3/12/2013 13:06:01
[SAMPLE]

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE20

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00063	43.18773	0.03631	0.01291	0.58337	0.00421	0.00802	14.94700	0.00139
#2	-0.00160	42.99207	0.03363	0.01211	0.58151	0.00419	0.00661	14.90419	0.00127
Mean	-0.00112	43.08990	0.03497	0.01251	0.58244	0.00420	0.00732	14.92559	0.00133
%RSD	61.06973	0.32107	5.42095	4.50620	0.22658	0.35119	13.59572	0.20280	6.74029

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04403	0.05033	0.08286	114.71287	14.62293	0.04325	13.80141	2.33410	0.00438
#2	0.04271	0.05038	0.08241	114.41550	14.55360	0.04302	13.77486	2.32932	0.00368
Mean	0.04337	0.05036	0.08263	114.56419	14.58826	0.04314	13.78813	2.33171	0.00403
%RSD	2.14087	0.07070	0.38829	0.18354	0.33601	0.37643	0.13615	0.14475	12.13142

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.37715	0.06546	3.01884	0.10234	0.08927	3.03305	0.00283	0.00776	0.01102
#2	0.37641	0.06480	2.99120	0.10118	0.09250	3.03305	0.00296	0.01242	0.01177
Mean	0.37678	0.06513	3.00502	0.10176	0.09088	3.03305	0.00290	0.01009	0.01140
%RSD	0.13892	0.71383	0.65024	0.80589	2.51237	0.00000	3.10497	32.62775	4.62833

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	11.08856	0.00333	0.21418	0.37251	-0.02071	0.14193	0.14951	0.26066	0.03634
#2	11.05724	-0.00289	0.21347	0.37239	-0.01551	0.12452	0.14890	0.26272	0.03582
Mean	11.07290	0.00022	0.21383	0.37245	-0.01811	0.13323	0.14921	0.26169	0.03608
%RSD	0.20000	2036.44276	0.23343	0.02173	20.33564	9.23815	0.28528	0.55656	1.01810

	Pb	Se
	calc	calc
#1	0.09362	0.00994
#2	0.09539	0.01199
Mean	0.09450	0.01096
%RSD	1.32257	13.21033

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:01

SampleId1 : 1303059-1

SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 13:44:58

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE23

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00005	27.72241	0.91406	0.00911	0.43113	0.00485	0.01087	110.87212	0.00042
#2	-0.00198	27.81847	0.92815	0.00849	0.43131	0.00481	0.00508	110.58840	-0.00004

Mean	-0.00102	27.77044	0.92110	0.00880	0.43122	0.00483	0.00798	110.73026	0.00019
%RSD	133.83975	0.24458	1.08147	4.92778	0.02998	0.58334	51.31860	0.18118	169.97029
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01721	0.01248	0.02735	91.26777	10.42594	0.02530	9.09695	0.87173	1.35294
#2	0.01635	0.01129	0.02663	91.16156	10.46053	0.02541	9.06831	0.87161	1.35130
Mean	0.01678	0.01188	0.02699	91.21467	10.44324	0.02535	9.08263	0.87167	1.35212
%RSD	3.61932	7.10199	1.88575	0.08234	0.23418	0.29115	0.22303	0.00969	0.08569
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.79387	0.02016	2.05754	0.10791	0.09030	37.03838	0.00544	0.44182	0.40608
#2	0.79685	0.01891	2.07982	0.09975	0.09126	37.17245	0.00057	0.43779	0.41843
Mean	0.79536	0.01953	2.06868	0.10383	0.09078	37.10541	0.00300	0.43981	0.41226
%RSD	0.26478	4.52242	0.76149	5.55380	0.75055	0.25548	114.74556	0.64701	2.11964
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	11.93610	0.00400	0.36763	0.10612	0.01099	1.45382	1.22303	0.10777	0.02296
#2	11.95836	0.00034	0.36788	0.10635	0.01008	1.41956	1.22241	0.10606	0.02260
Mean	11.94723	0.00217	0.36775	0.10623	0.01054	1.43669	1.22272	0.10691	0.02278
%RSD	0.13169	119.11570	0.04712	0.15251	6.09845	1.68617	0.03587	1.13450	1.12048
	Pb	Se							
	calc	calc							
#1	0.09616	0.41798							
#2	0.09409	0.42488							
Mean	0.09513	0.42143							
%RSD	1.54090	1.15818							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-1D SampleId2 :
Analysis commenced : 3/11/2013 13:46:42
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:01
[SAMPLE]

Position : TUBE24

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00149	27.08734	0.86714	0.00721	0.41457	0.00456	0.00383	135.90896	-0.00033
#2	-0.00178	27.12701	0.86353	0.00782	0.41417	0.00453	0.01136	135.75291	0.00027
Mean	-0.00163	27.10718	0.86533	0.00751	0.41437	0.00454	0.00759	135.83094	-0.00003
%RSD	12.56441	0.10350	0.29495	5.77259	0.06863	0.47173	70.18053	0.08124	1452.59421
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01497	0.01155	0.02676	90.50765	10.63945	0.02510	9.00393	0.90775	1.27839
#2	0.01610	0.01160	0.02722	90.61925	10.65352	0.02515	9.01163	0.90978	1.28110
Mean	0.01553	0.01157	0.02699	90.56345	10.64649	0.02513	9.00778	0.90877	1.27974

%RSD	5.13146	0.28488	1.19050	0.08713	0.09349	0.15425	0.06045	0.15804	0.14971
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.79242	0.01854	2.07132	0.09706	0.09237	34.63126	-0.00393	0.38826	0.37441
#2	0.79313	0.02033	2.05731	0.09968	0.09045	34.74597	-0.00300	0.38566	0.37461
Mean	0.79278	0.01943	2.06431	0.09837	0.09141	34.68861	-0.00347	0.38696	0.37451
%RSD	0.06272	6.53895	0.47988	1.88240	1.49111	0.23384	19.12791	0.47490	0.03664
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	9.53208	0.00144	0.37760	0.10842	0.01387	1.28645	1.07083	0.10606	0.02646
#2	9.53951	0.00217	0.37848	0.10947	0.00570	1.30324	1.07208	0.10588	0.02622
Mean	9.53580	0.00180	0.37804	0.10895	0.00978	1.29485	1.07146	0.10597	0.02634
%RSD	0.05510	28.64920	0.16396	0.67908	59.04816	0.91719	0.08266	0.11446	0.64241
	Pb	Se							
	calc	calc							
#1	0.09393	0.37902							
#2	0.09352	0.37829							
Mean	0.09373	0.37865							
%RSD	0.31212	0.13744							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-1L 5X SampleId2 :
Analysis commenced : 3/11/2013 13:48:28
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:01

[SAMPLE]

Position : TUBE25

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00148	5.73339	0.18711	-0.00610	0.08637	0.00110	-0.00280	22.16892	-0.00042
#2	-0.00109	5.69637	0.18478	-0.00641	0.08629	0.00107	0.00314	22.11385	-0.00032
Mean	-0.00129	5.71488	0.18595	-0.00626	0.08633	0.00108	0.00017	22.14139	-0.00037
%RSD	21.24284	0.45802	0.88627	3.46600	0.05978	2.29125	2428.56500	0.17586	19.62901
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00254	0.00119	0.00375	17.40054	1.65316	0.00199	1.86274	0.18054	0.27969
#2	0.00218	0.00103	0.00273	17.36563	1.64986	0.00201	1.85384	0.18019	0.27604
Mean	0.00236	0.00111	0.00324	17.38309	1.65151	0.00200	1.85829	0.18036	0.27786
%RSD	10.81090	10.14968	22.16439	0.14201	0.14125	1.01541	0.33879	0.13970	0.92821
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.13973	0.00287	0.41678	0.01870	0.01610	7.59398	-0.00107	0.09295	0.08908
#2	0.13912	0.00385	0.41221	0.01685	0.01930	7.53772	-0.00188	0.10118	0.08538
Mean	0.13943	0.00336	0.41450	0.01777	0.01770	7.56585	-0.00147	0.09707	0.08723
%RSD	0.31178	20.76615	0.77990	7.35882	12.81437	0.52582	38.89538	5.99349	3.00495

ted: 3/12/2013 13:06:27 User: STEVE WORKMAN

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.43414	-0.00175	0.07311	0.01990	-0.00948	0.26688	0.25113	0.02133	0.00395
#2	2.42153	0.00008	0.07274	0.01929	-0.00295	0.24555	0.24969	0.02236	0.00419
Mean	2.42784	-0.00084	0.07293	0.01959	-0.00622	0.25621	0.25041	0.02185	0.00407
%RSD	0.36735	154.59981	0.35545	2.20569	74.33205	5.88771	0.40627	3.32995	4.17237

	Pb	Se
	calc	calc
#1	0.01696	0.09037
#2	0.01849	0.09064
Mean	0.01772	0.09051
%RSD	6.07805	0.20882

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:01

SampleId1 : 1303059-1MS SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 13:50:13

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : TUBE26

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09070	42.31980	1.87751	0.80571	1.45703	0.05336	0.01022	165.94760	0.05230
#2	0.09187	42.43254	1.89356	0.80792	1.45968	0.05351	0.00391	166.28530	0.05144
Mean	0.09128	42.37617	1.88553	0.80681	1.45835	0.05344	0.00707	166.11645	0.05187
%RSD	0.90698	0.18813	0.60182	0.19344	0.12836	0.19221	63.08517	0.14375	1.18020

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48408	0.20774	0.28998	95.52256	52.47338	0.54694	48.31776	1.33609	2.32388
#2	0.48458	0.20679	0.28924	95.79587	52.56328	0.54823	48.42530	1.34089	2.32489
Mean	0.48433	0.20727	0.28961	95.65921	52.51833	0.54759	48.37153	1.33849	2.32439
%RSD	0.07263	0.32152	0.18237	0.20203	0.12105	0.16709	0.15720	0.25335	0.03073

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	39.65083	0.52452	2.01528	0.57755	0.52433	36.45632	0.31591	2.11963	1.96923
#2	39.74362	0.52535	2.02079	0.57058	0.53705	36.55204	0.30760	2.11699	2.03481
Mean	39.69722	0.52494	2.01804	0.57406	0.53069	36.50418	0.31176	2.11831	2.00202
%RSD	0.16529	0.11219	0.19311	0.85964	1.69497	0.18541	1.88435	0.08806	2.31602

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	12.12367	0.49867	0.86161	0.42835	1.91770	1.31852	1.89405	0.56535	0.03913
#2	12.16224	0.49903	0.86272	0.43006	1.91368	1.31265	1.89788	0.56844	0.03837
Mean	12.14295	0.49885	0.86217	0.42921	1.91569	1.31559	1.89596	0.56690	0.03875
%RSD	0.22461	0.05159	0.09161	0.28283	0.14855	0.31552	0.14285	0.38587	1.38772

	Pb	Seser: STEVE WORKMAN
	calc	calc
#1	0.54206	2.01932
#2	0.54822	2.06217
Mean	0.54514	2.04074
%RSD	0.79914	1.48503

Method : Paragon2 File : 130311A
SampleId1 : 1303059-1MSD **SampleId2 :**
Analysis commenced : 3/11/2013 13:51:58
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:02

[SAMPLE]

Position : TUBE27

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09041	42.43176	1.82704	0.79087	1.42111	0.05269	0.01136	287.50553	0.05138
#2	0.09023	42.38181	1.82902	0.79265	1.42081	0.05281	0.00944	287.93373	0.05134
Mean	0.09032	42.40679	1.82803	0.79176	1.42096	0.05275	0.01040	287.71963	0.05136
%RSD	0.14022	0.08329	0.07648	0.15879	0.01464	0.16536	13.11251	0.10524	0.05867

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.47593	0.20165	0.28762	94.21180	54.23576	0.55760	47.79643	1.54709	2.27091
#2	0.47656	0.20312	0.28735	94.40669	54.23223	0.55783	47.87793	1.54944	2.27236
Mean	0.47624	0.20239	0.28749	94.30925	54.23399	0.55772	47.83718	1.54827	2.27163
%RSD	0.09378	0.51529	0.06693	0.14613	0.00461	0.02833	0.12047	0.10695	0.04520

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	40.61500	0.51343	2.13288	0.56294	0.52605	34.03106	0.29985	2.12283	1.99018
#2	40.58938	0.51039	2.16710	0.56295	0.53821	34.02724	0.29573	2.11519	2.04571
Mean	40.60219	0.51191	2.14999	0.56295	0.53213	34.02915	0.29779	2.11901	2.01794
%RSD	0.04463	0.42082	1.12574	0.00121	1.61609	0.00794	0.97640	0.25462	1.94577

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	12.77467	0.49615	0.91661	0.38895	1.90212	1.32523	1.87735	0.54696	0.04017
#2	12.77497	0.49140	0.91658	0.38941	1.89676	1.31485	1.87867	0.55349	0.04021
Mean	12.77482	0.49377	0.91660	0.38918	1.89944	1.32004	1.87801	0.55023	0.04019
%RSD	0.00169	0.68133	0.00219	0.08319	0.19950	0.55621	0.04983	0.83923	0.06963

	Pb	Se
	calc	calc
#1	0.53833	2.03435
#2	0.54645	2.06885
Mean	0.54239	2.05160
%RSD	1.05796	1.18896

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:02

SampleId1 : CCV SampleId2 :
 Analysis commenced : 3/11/2013 13:54:13
 Dilution ratio : 1.00000 to 1.00000 Tray :

[CV]
 Position : STD1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.19335	48.86353	0.51659	0.98969	1.00752	0.47398	0.53558	49.45031	0.51721
#2	0.19463	49.36862	0.52510	1.00288	1.01970	0.47906	0.52807	49.96329	0.52124
Mean	0.19399	49.11607	0.52085	0.99629	1.01361	0.47652	0.53182	49.70680	0.51923
%RSD	0.46873	0.72716	1.15441	0.93549	0.84955	0.75402	0.99822	0.72974	0.54913

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.47627	0.95206	1.00313	19.40108	48.89479	0.51058	48.15410	0.93350	0.96670
#2	0.48011	0.96113	1.01558	19.62330	49.33793	0.51603	48.63663	0.94366	0.97306
Mean	0.47819	0.95660	1.00935	19.51219	49.11636	0.51330	48.39537	0.93858	0.96988
%RSD	0.56879	0.67053	0.87200	0.80529	0.63797	0.75082	0.70502	0.76529	0.46371

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	48.04944	1.01430	4.74561	0.96221	0.91805	4.86609	0.49666	0.99062	0.93825
#2	48.45553	1.02585	4.79120	0.96520	0.92984	4.92598	0.48847	1.00390	0.96343
Mean	48.25248	1.02007	4.76840	0.96370	0.92394	4.89603	0.49257	0.99726	0.95084
%RSD	0.59509	0.80069	0.67608	0.21938	0.90209	0.86504	1.17433	0.94161	1.87192

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.70642	1.02456	0.49964	0.46831	0.51067	4.74732	0.47440	0.91621	0.95604
#2	4.75252	1.04286	0.50558	0.47480	0.52755	4.78610	0.47922	0.92602	0.96560
Mean	4.72947	1.03371	0.50261	0.47155	0.51911	4.76671	0.47681	0.92111	0.96082
%RSD	0.68932	1.25149	0.83635	0.97240	2.29987	0.57532	0.71403	0.75313	0.70392

	Pb calc	Se calc
#1	0.93275	0.95569
#2	0.94161	0.97690
Mean	0.93718	0.96630
%RSD	0.66831	1.55220

Method : Paragon2 File : 130311A
 SampleId1 : CCB SampleId2 :
 Analysis commenced : 3/11/2013 15:21:00
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:02
 [CB]
 Position : STD2

Final concentrations

Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
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#1	0.00088	0.09267	0.00449	-0.00702	-0.00011	0.00057	0.00495	-0.06085	-0.00046
#2	0.00070	0.08682	-0.00064	-0.00739	-0.00014	0.00056	0.00180	-0.05960	-0.00026
Mean	0.00079	0.08974	0.00192	-0.00721	-0.00012	0.00057	0.00337	-0.06023	-0.00036
%RSD	16.74682	4.61305	188.50488	3.61057	20.80653	1.05448	66.06336	1.46692	41.16123

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00011	0.00049	-0.00212	0.00603	-0.17502	-0.00288	0.00027	-0.00043	-0.00109
#2	-0.00034	-0.00013	-0.00182	0.00649	-0.16420	-0.00284	-0.00371	-0.00031	-0.00006
Mean	-0.00022	0.00018	-0.00197	0.00626	-0.16961	-0.00286	-0.00172	-0.00037	-0.00058
%RSD	74.03238	243.18681	10.46411	5.27801	4.50762	0.77457	164.02751	23.33726	125.70827

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01664	-0.00003	-0.01079	0.00436	-0.00281	-0.02154	0.00080	-0.00337	-0.00261
#2	0.01705	0.00002	-0.00847	0.00278	-0.00369	-0.01035	0.00002	0.00528	-0.00522
Mean	0.01685	-0.00001	-0.00963	0.00357	-0.00325	-0.01594	0.00041	0.00096	-0.00391
%RSD	1.71698	522.21445	17.05559	31.39749	19.21266	49.63470	133.53413	637.93559	47.20102

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.01083	-0.00209	-0.00142	-0.00315	-0.00077	0.00010	0.00065	-0.00147	0.00030
#2	-0.00923	-0.00173	-0.00138	-0.00295	0.00066	-0.00911	0.00007	-0.00094	0.00064
Mean	-0.01003	-0.00191	-0.00140	-0.00305	-0.00006	-0.00450	0.00036	-0.00121	0.00047
%RSD	11.30917	13.54831	2.37118	4.68522	1832.71691	144.57445	114.65816	31.21709	51.77480

	Pb	Se
	calc	calc
#1	-0.00042	-0.00286
#2	-0.00154	-0.00172
Mean	-0.00098	-0.00229
%RSD	80.62397	35.12627

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 15:23:27
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:02
[CV]

Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19863	48.70862	0.51625	0.98136	0.98959	0.47717	0.54192	48.71502	0.51485
#2	0.19799	48.94090	0.51881	0.98344	0.99252	0.47909	0.52962	48.86375	0.51753
Mean	0.19831	48.82476	0.51753	0.98240	0.99105	0.47813	0.53577	48.78938	0.51619
%RSD	0.22896	0.33640	0.35014	0.15003	0.20935	0.28334	1.62310	0.21556	0.36781

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48155	0.95597	1.00461	19.05060	49.14931	0.51321	47.46169	0.94904	0.95878

#2	0.48344	0.95952	1.00761	19.11738	49.35173	0.51540	47.61119	0.95299	0.96436
Mean	0.48250	0.95774	1.00611	19.08399	49.25052	0.51431	47.53644	0.95101	0.96157
%RSD	0.27742	0.26163	0.21067	0.24743	0.29062	0.30196	0.22238	0.29382	0.40988

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.39076	1.00516	4.80020	0.96770	0.90188	4.84363	0.49814	0.98498	0.93494
#2	48.55997	1.00568	4.80491	0.96502	0.93156	4.86983	0.48660	0.99050	0.96591
Mean	48.47536	1.00542	4.80255	0.96636	0.91672	4.85673	0.49237	0.98774	0.95042
%RSD	0.24683	0.03700	0.06932	0.19604	2.28929	0.38151	1.65763	0.39545	2.30458

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.64024	1.01797	0.48948	0.46698	0.51359	4.76935	0.47875	0.93455	0.96384
#2	4.66041	1.01834	0.49019	0.46985	0.51469	4.77591	0.47844	0.93900	0.96712
Mean	4.65032	1.01816	0.48983	0.46841	0.51414	4.77263	0.47860	0.93678	0.96548
%RSD	0.30674	0.02519	0.10351	0.43342	0.15125	0.09732	0.04607	0.33610	0.24012

	Pb	Se
	calc	calc
#1	0.92380	0.95160
#2	0.94270	0.97410
Mean	0.93325	0.96285
%RSD	1.43231	1.65241

Method : Paragon2 File : 130311A Printed : 3/12/2013 13:06:02
SampleId1 : CCB SampleId2 : [CB]
Analysis commenced : 3/11/2013 15:25:18
Dilution ratio : 1.00000 to 1.00000 Tray : Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00010	0.07019	-0.00157	-0.00555	-0.00025	0.00056	-0.00311	-0.05679	-0.00029
#2	-0.00019	0.06882	-0.00297	-0.00807	-0.00022	0.00054	-0.00014	-0.05742	0.00002
Mean	-0.00015	0.06950	-0.00227	-0.00681	-0.00023	0.00055	-0.00162	-0.05710	-0.00013
%RSD	42.35165	1.39823	43.52547	26.11689	11.05115	3.05417	129.49827	0.77359	164.84102

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00075	-0.00067	-0.00237	0.00797	-0.15010	-0.00273	-0.01445	-0.00037	0.00045
#2	-0.00071	-0.00001	-0.00245	0.00797	-0.14798	-0.00273	-0.01077	-0.00025	-0.00032
Mean	-0.00073	-0.00034	-0.00241	0.00797	-0.14904	-0.00273	-0.01261	-0.00031	0.00006
%RSD	4.50757	136.35659	2.49833	0.00000	1.00366	0.00000	20.64330	27.94947	848.50131

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02258	-0.00066	-0.02055	-0.00115	-0.00030	-0.01035	-0.00010	-0.00243	0.00397
#2	0.02123	-0.00073	-0.00731	0.00051	0.00232	-0.01035	-0.00394	-0.00381	0.00100

Mean	0.02190	-0.00070	-0.01393	-0.00032	0.00101	-0.01035	-0.00202	-0.00312	0.00248
%RSD	4.35917	6.67695	67.22073	365.46910	183.04809	0.00000	134.56261	31.30866	84.64025
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00397	0.00157	-0.00147	-0.00264	-0.00210	-0.02949	-0.00011	-0.00041	0.00030
#2	-0.00415	-0.00282	-0.00144	-0.00278	-0.00651	-0.03870	-0.00014	-0.00076	0.00028
Mean	-0.00406	-0.00063	-0.00146	-0.00271	-0.00431	-0.03410	-0.00012	-0.00058	0.00029
%RSD	3.06214	494.20925	1.36767	3.65325	72.55754	19.09331	17.49628	42.91517	4.99117
	Pb	Se							
	calc	calc							
#1	-0.00058	0.00184							
#2	0.00172	-0.00061							
Mean	0.00057	0.00062							
%RSD	286.23349	280.32355							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-2 SampleId2 :
Analysis commenced : 3/11/2013 15:27:08
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:02

[SAMPLE]

Position : TUBE28

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00199	17.17183	0.02337	0.00205	0.33583	0.00218	0.00232	19.96578	0.00028
#2	-0.00039	17.12526	0.02092	0.00126	0.33616	0.00216	0.00179	19.97523	-0.00024
Mean	0.00080	17.14855	0.02215	0.00166	0.33600	0.00217	0.00206	19.97050	0.00002
%RSD	211.25134	0.19201	7.81508	34.05392	0.06922	0.66840	18.20795	0.03345	2129.06676
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01106	0.01317	0.01272	31.99070	4.21521	0.01104	6.10613	0.64012	0.02130
#2	0.00999	0.01228	0.01273	32.05790	4.19960	0.01105	6.09629	0.64123	0.02002
Mean	0.01053	0.01272	0.01273	32.02430	4.20741	0.01105	6.10121	0.64068	0.02066
%RSD	7.13990	4.96794	0.10322	0.14839	0.26231	0.06684	0.11408	0.12238	4.37846
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08111	0.01729	1.28128	0.03626	0.02315	0.76200	0.00376	0.03044	0.02170
#2	0.08078	0.01562	1.27918	0.02852	0.02847	0.75080	0.00324	0.02121	0.02892
Mean	0.08095	0.01645	1.28023	0.03239	0.02581	0.75640	0.00350	0.02583	0.02531
%RSD	0.28617	7.15839	0.11589	16.91088	14.56227	1.04669	10.51772	25.25942	20.16184
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	8.00866	0.00542	0.06629	0.14095	-0.00280	0.14426	0.11844	0.07715	0.01059
#2	8.01367	-0.00372	0.06619	0.14128	-0.00743	0.12517	0.11761	0.07769	0.00992
Mean	8.01117	0.00085	0.06624	0.14112	-0.00511	0.13472	0.11803	0.07742	0.01025

%RSD	0.04423	760.09139	0.10034	0.16346	63.97242	10.01700	0.49796	0.48639	4.67746
	Pb	Se							
	calc	calc							
#1	0.02752	0.02461							
#2	0.02848	0.02636							
Mean	0.02800	0.02548							
%RSD	2.43933	4.83387							

Method : Paragon2 File : 130311A
SampleId1 : ZZZ **SampleId2 :**
Analysis commenced : 3/11/2013 15:28:52
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:03
[SAMPLE]
Position : TUBE29

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00259	27.01213	1.11278	0.02450	0.35020	0.02770	0.00500	49.40290	-0.00097
#2	-0.00539	26.88639	1.11697	0.02628	0.34954	0.02764	-0.00287	49.28739	-0.00123
Mean	-0.00399	26.94926	1.11487	0.02539	0.34987	0.02767	0.00107	49.34515	-0.00110
%RSD	49.67392	0.32991	0.26577	4.95321	0.13296	0.14682	522.46004	0.16553	16.78498

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02035	0.00117	0.00572	67.25705	7.71710	0.02705	6.30424	0.72584	8.04386
#2	0.01993	-0.00088	0.00428	67.18528	7.68170	0.02700	6.24702	0.72479	8.01828
Mean	0.02014	0.00015	0.00500	67.22116	7.69940	0.02703	6.27563	0.72531	8.03107
%RSD	1.46601	969.30073	20.36973	0.07550	0.32517	0.12291	0.64473	0.10216	0.22521

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.34010	0.01203	1.65169	0.78869	0.74619	27.87168	-0.02649	0.61923	0.57698
#2	0.33957	0.01174	1.63255	0.78681	0.75895	27.79938	-0.02884	0.61870	0.60123
Mean	0.33984	0.01188	1.64212	0.78775	0.75257	27.83553	-0.02767	0.61897	0.58910
%RSD	0.11118	1.69530	0.82402	0.16926	1.19864	0.18368	6.01259	0.05985	2.91053

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	7.65020	0.01482	0.20906	0.23717	-0.00185	42.92963	4.24373	0.08852	0.05434
#2	7.63397	0.01043	0.20852	0.23754	-0.00935	42.95808	4.23143	0.08869	0.05378
Mean	7.64208	0.01263	0.20879	0.23736	-0.00560	42.94386	4.23758	0.08860	0.05406
%RSD	0.15021	24.58337	0.18168	0.10872	94.78028	0.04685	0.20531	0.14167	0.72348

	Pb	Se							
	calc	calc							
#1	0.76035	0.59105							
#2	0.76823	0.60705							
Mean	0.76429	0.59905							
%RSD	0.72915	1.88850							

ted: 3/12/2013 13:06:28 User: STEVE WORKMAN
 Method : Paragon2 File : 130311A
 SampleId1 : ZZZ SampleId2 :
 Analysis commenced : 3/11/2013 15:33:38
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:03
 [SAMPLE]
 Position : TUBE30

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00134	25.93505	0.99334	0.02094	0.35012	0.02154	0.00584	54.31031	-0.00034
#2	-0.00248	25.78290	0.98682	0.02002	0.34764	0.02133	-0.00088	53.95140	-0.00046
Mean	-0.00191	25.85897	0.99008	0.02048	0.34888	0.02144	0.00248	54.13085	-0.00040
%RSD	42.37599	0.41604	0.46560	3.17568	0.50370	0.68377	191.31064	0.46885	20.47369
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01749	0.00385	0.01235	72.34947	7.45171	0.02621	6.67590	0.81253	7.12637
#2	0.01666	0.00206	0.01002	71.77654	7.40325	0.02602	6.61621	0.80864	7.08580
Mean	0.01707	0.00295	0.01119	72.06301	7.42748	0.02611	6.64606	0.81059	7.10609
%RSD	3.44214	42.78573	14.75103	0.56217	0.46133	0.53001	0.63509	0.33897	0.40371
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.25865	0.01534	1.67409	0.60001	0.56210	25.40399	-0.02021	0.54685	0.51330
#2	0.25692	0.01481	1.64842	0.59244	0.57534	25.19506	-0.02080	0.54197	0.52760
Mean	0.25779	0.01507	1.66126	0.59622	0.56872	25.29952	-0.02050	0.54441	0.52045
%RSD	0.47296	2.46762	1.09272	0.89735	1.64565	0.58394	2.05330	0.63438	1.94250
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	5.70091	0.00790	0.19795	0.21134	-0.01293	34.27456	3.44202	0.09828	0.05086
#2	5.65676	0.00534	0.19638	0.20947	-0.01364	34.06063	3.41812	0.09562	0.04997
Mean	5.67883	0.00662	0.19716	0.21040	-0.01329	34.16760	3.43007	0.09695	0.05042
%RSD	0.54977	27.31517	0.56024	0.62894	3.76473	0.44273	0.49257	1.94224	1.23640
	Pb calc	Se calc							
#1	0.57472	0.52448							
#2	0.58103	0.53239							
Mean	0.57788	0.52843							
%RSD	0.77194	1.05845							

Method : Paragon2 File : 130311A
 SampleId1 : CCV SampleId2 :
 Analysis commenced : 3/11/2013 15:35:44
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:03
 [CV]
 Position : STD1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.19812	48.59974	0.50856	0.98068	0.99406	0.47685	0.53927	48.86441	0.51716
#2	0.19727	48.75427	0.50996	0.97737	0.99685	0.47803	0.53789	48.92686	0.51549
Mean	0.19769	48.67701	0.50926	0.97903	0.99545	0.47744	0.53858	48.89563	0.51633
%RSD	0.30479	0.22448	0.19409	0.23910	0.19800	0.17522	0.18193	0.09031	0.22938
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.48110	0.95788	1.00435	19.09543	48.95772	0.51096	47.43443	0.94928	0.96865
#2	0.48091	0.95906	1.00722	19.14734	49.05828	0.51200	47.49680	0.95169	0.96641
Mean	0.48100	0.95847	1.00579	19.12139	49.00800	0.51148	47.46561	0.95049	0.96753
%RSD	0.02711	0.08668	0.20180	0.19193	0.14508	0.14373	0.09291	0.17914	0.16388
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	48.33132	1.00601	4.76654	0.96037	0.90284	4.82491	0.48704	0.98234	0.92005
#2	48.38324	1.00413	4.80962	0.96883	0.91960	4.84737	0.47933	0.98486	0.94921
Mean	48.35728	1.00507	4.78808	0.96460	0.91122	4.83614	0.48319	0.98360	0.93463
%RSD	0.07592	0.13261	0.63615	0.62054	1.30119	0.32839	1.12822	0.18128	2.20561
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.63234	1.00663	0.49062	0.46642	0.50455	4.74433	0.47748	0.93241	0.96441
#2	4.64352	1.01651	0.49158	0.46806	0.50602	4.78512	0.47897	0.93580	0.96612
Mean	4.63793	1.01157	0.49110	0.46724	0.50529	4.76473	0.47822	0.93411	0.96527
%RSD	0.17047	0.69074	0.13857	0.24896	0.20556	0.60534	0.22102	0.25616	0.12526
	Pb calc	Se calc							
#1	0.92199	0.94079							
#2	0.93600	0.96108							
Mean	0.92900	0.95094							
%RSD	1.06585	1.50835							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:03

SampleId1 : CCB

SampleId2 :

[CB]

Analysis commenced : 3/11/2013 15:37:35

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : STD2

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00027	0.07286	-0.00087	-0.00610	-0.00011	0.00056	0.00617	-0.05304	-0.00038
#2	-0.00010	0.07259	0.00018	-0.00715	-0.00018	0.00056	-0.00241	-0.05351	-0.00013
Mean	0.00008	0.07273	-0.00035	-0.00662	-0.00014	0.00056	0.00188	-0.05328	-0.00026
%RSD	307.19671	0.26232	212.48596	11.12974	36.27598	0.44333	322.74821	0.62186	69.93852
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo

	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00061	-0.00011	-0.00210	0.00945	-0.12565	-0.00264	-0.00371	-0.00031	0.00166
#2	-0.00089	-0.00031	-0.00227	0.00945	-0.13600	-0.00266	-0.00371	-0.00031	0.00134
Mean	-0.00075	-0.00021	-0.00218	0.00945	-0.13083	-0.00265	-0.00371	-0.00031	0.00150
%RSD	26.01375	68.18984	5.35032	0.00000	5.59015	0.62700	0.00000	0.00000	15.04483

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.02393	-0.00033	-0.00824	0.00074	-0.00075	-0.00662	-0.00023	-0.00448	-0.00080
#2	0.02331	-0.00106	-0.01126	-0.00280	0.00196	-0.02154	0.00254	-0.00038	0.00163
Mean	0.02362	-0.00070	-0.00975	-0.00103	0.00060	-0.01408	0.00115	-0.00243	0.00041
%RSD	1.83733	73.44642	21.90804	243.67177	317.54221	74.94791	169.79594	119.40284	417.90162

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	-0.00315	-0.00246	-0.00134	-0.00260	-0.00602	-0.01371	0.00036	-0.00058	0.00058
#2	-0.00526	-0.00209	-0.00141	-0.00268	-0.00627	-0.03739	-0.00095	-0.00023	0.00019
Mean	-0.00421	-0.00227	-0.00137	-0.00264	-0.00615	-0.02555	-0.00030	-0.00041	0.00038
%RSD	35.51072	11.37668	3.38781	2.28837	2.85886	65.52623	313.55156	61.61162	72.90934

	Pb calc	Se calc
#1	-0.00025	-0.00203
#2	0.00038	0.00096
Mean	0.00006	-0.00053
%RSD	732.66537	395.60417

Method : Paragon2 File : 130311A
SampleId1 : 1303059-3 **SampleId2 :**
Analysis commenced : 3/11/2013 15:39:17
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:03
[SAMPLE]

Position : TUBE29

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00397	27.26272	1.13000	0.02573	0.35352	0.02867	0.00599	50.10725	-0.00043
#2	-0.00427	27.26478	1.13629	0.02702	0.35491	0.02871	0.00447	50.26452	-0.00130
Mean	-0.00412	27.26375	1.13315	0.02637	0.35422	0.02869	0.00523	50.18589	-0.00087
%RSD	5.07581	0.00533	0.39222	3.45335	0.27725	0.10694	20.54423	0.22158	70.84704

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.02038	0.00176	0.00590	68.11180	7.77176	0.02727	6.49115	0.74694	8.28243
#2	0.02076	0.00081	0.00437	68.42644	7.79125	0.02736	6.49648	0.75027	8.30822
Mean	0.02057	0.00129	0.00514	68.26912	7.78150	0.02732	6.49381	0.74861	8.29533
%RSD	1.27572	52.24028	21.06398	0.32589	0.17709	0.22970	0.05806	0.31461	0.21986

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
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#1	0.34549	0.01369	1.67970	0.81772	0.77740	28.09242	-0.00558	0.62814	0.58371
#2	0.34450	0.01266	1.65916	0.81892	0.79580	28.26371	-0.00555	0.62545	0.60340
Mean	0.34500	0.01318	1.66943	0.81832	0.78660	28.17807	-0.00556	0.62680	0.59356
%RSD	0.20219	5.52768	0.86992	0.10374	1.65371	0.42984	0.34802	0.30303	2.34570

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	7.74353	0.01372	0.21089	0.23919	0.00360	43.32299	4.28301	0.08994	0.05517
#2	7.75017	0.01811	0.21161	0.24130	0.00446	43.54053	4.29010	0.09118	0.05511
Mean	7.74685	0.01592	0.21125	0.24025	0.00403	43.43176	4.28656	0.09056	0.05514
%RSD	0.06063	19.49082	0.23942	0.62161	15.07145	0.35418	0.11703	0.97032	0.07945

	Pb	Se
	calc	calc
#1	0.79083	0.59851
#2	0.80350	0.61075
Mean	0.79716	0.60463
%RSD	1.12387	1.43133

Method : Paragon2 File : 130311A
SampleId1 : 1303059-4 **SampleId2 :**
Analysis commenced : 3/11/2013 15:40:53
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:04
[SAMPLE]

Position : TUBE30

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00164	26.38932	1.01499	0.01904	0.35531	0.02260	0.00368	55.33869	-0.00107
#2	-0.00293	26.42002	1.02012	0.01959	0.35557	0.02261	0.00334	55.41995	-0.00087
Mean	-0.00228	26.40467	1.01756	0.01932	0.35544	0.02260	0.00351	55.37932	-0.00097
%RSD	39.97670	0.08221	0.35594	2.02034	0.05090	0.00928	6.73431	0.10376	14.37287

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01759	0.00449	0.01128	73.66070	7.53510	0.02667	6.93845	0.84143	7.38321
#2	0.01792	0.00385	0.01085	73.83611	7.55719	0.02675	6.93971	0.84294	7.39470
Mean	0.01776	0.00417	0.01106	73.74841	7.54614	0.02671	6.93908	0.84218	7.38896
%RSD	1.29707	10.90278	2.77265	0.16818	0.20704	0.20035	0.01279	0.12672	0.10995

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.26296	0.01586	1.68763	0.62580	0.59003	25.78014	-0.00196	0.56846	0.52635
#2	0.26333	0.01580	1.69393	0.62276	0.60119	25.95115	-0.00321	0.55764	0.53425
Mean	0.26314	0.01583	1.69078	0.62428	0.59561	25.86564	-0.00258	0.56305	0.53030
%RSD	0.09929	0.29372	0.26355	0.34437	1.32501	0.46750	34.03390	1.35913	1.05314

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	5.80017	0.01010	0.20081	0.21276	-0.00904	34.70108	3.48827	0.09881	0.05145

#2	5.79694	0.00644	0.20100	0.21350	0.00252	34.75985	3.49525	0.09810	0.05157
Mean	5.79856	0.00827	0.20090	0.21313	-0.00326	34.73047	3.49176	0.09846	0.05151
%RSD	0.03945	31.29970	0.06956	0.24475	250.45352	0.11965	0.14143	0.51000	0.15348
	Pb	Se							
	calc	calc							
#1	0.60194	0.54037							
#2	0.60838	0.54204							
Mean	0.60516	0.54121							
%RSD	0.75153	0.21743							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-5 SampleId2 :
Analysis commenced : 3/11/2013 15:42:55
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:04
[SAMPLE]

Position : TUBE31

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00138	17.07197	0.06556	0.00150	0.35484	0.00367	0.00282	62.77725	-0.00004
#2	-0.00234	16.98586	0.06148	0.00058	0.35381	0.00365	0.00211	62.77843	-0.00035
Mean	-0.00186	17.02892	0.06352	0.00104	0.35433	0.00366	0.00246	62.77784	-0.00019
%RSD	36.34245	0.35757	4.54084	62.41519	0.20423	0.35368	20.13840	0.00133	111.82828

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01251	0.01198	0.01928	32.67521	3.98893	0.01143	6.17031	0.80999	0.05052
#2	0.01181	0.01212	0.01928	32.66872	3.96789	0.01141	6.15243	0.81068	0.04941
Mean	0.01216	0.01205	0.01928	32.67197	3.97841	0.01142	6.16137	0.81033	0.04997
%RSD	4.07845	0.84477	0.01673	0.01405	0.37397	0.11313	0.20514	0.06035	1.56752

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.11699	0.01751	1.19153	0.05945	0.05859	3.48921	0.01014	0.22555	0.22260
#2	0.11687	0.01759	1.20248	0.06422	0.05721	3.47425	0.01501	0.21840	0.22160
Mean	0.11693	0.01755	1.19701	0.06183	0.05790	3.48173	0.01258	0.22198	0.22210
%RSD	0.07433	0.35323	0.64714	5.46026	1.68291	0.30379	27.37955	2.27957	0.31633

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	5.55528	-0.00155	0.09548	0.16287	-0.00813	0.46738	0.71980	0.08564	0.01738
#2	5.52509	0.00430	0.09526	0.16268	-0.01279	0.46269	0.71876	0.08528	0.01715
Mean	5.54019	0.00137	0.09537	0.16278	-0.01046	0.46504	0.71928	0.08546	0.01726
%RSD	0.38533	301.15174	0.16033	0.07930	31.46473	0.71262	0.10245	0.30038	0.94835

	Pb	Se
	calc	calc
#1	0.05887	0.22358
#2	0.05955	0.22054

Mean 0.05921 0.22206ser: STEVE WORKMAN
%RSD 0.80114 0.96984

Method : Paragon2 File : 130311A
SampleId1 : 1303059-6 SampleId2 :
Analysis commenced : 3/11/2013 15:44:40
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:04
[SAMPLE]

Position : TUBE32

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00094	24.75424	0.20494	0.00083	0.23065	0.00628	-0.00295	59.78679	-0.00001
#2	-0.00084	24.69141	0.20704	0.00193	0.23007	0.00628	0.00650	59.78981	-0.00005
Mean	-0.00089	24.72283	0.20599	0.00138	0.23036	0.00628	0.00177	59.78830	-0.00003
%RSD	7.32642	0.17970	0.72002	56.58457	0.17938	0.04377	376.70367	0.00357	104.20054
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.02913	0.01197	0.04436	57.10359	4.84786	0.02966	9.82201	1.41620	2.19275
#2	0.02983	0.01233	0.04445	57.07337	4.83934	0.02964	9.80693	1.41595	2.19877
Mean	0.02948	0.01215	0.04441	57.08848	4.84360	0.02965	9.81447	1.41608	2.19576
%RSD	1.67749	2.09339	0.14471	0.03742	0.12440	0.03734	0.10863	0.01261	0.19380
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.19025	0.02516	1.67993	0.09676	0.08729	9.98533	0.00409	0.47328	0.44861
#2	0.19045	0.02529	1.65846	0.09850	0.09001	9.98533	0.00596	0.46268	0.45484
Mean	0.19035	0.02522	1.66919	0.09763	0.08865	9.98533	0.00503	0.46798	0.45172
%RSD	0.07618	0.36869	0.90959	1.25620	2.16479	0.00000	26.37039	1.60115	0.97582
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	8.80167	0.00361	0.15426	0.13063	-0.00388	3.13210	1.02082	0.13030	0.02932
#2	8.79419	0.00507	0.15389	0.13083	-0.00806	3.13545	1.01932	0.13012	0.02971
Mean	8.79793	0.00434	0.15408	0.13073	-0.00597	3.13377	1.02007	0.13021	0.02951
%RSD	0.06013	23.84704	0.16836	0.10733	49.55852	0.07570	0.10348	0.09859	0.94209
	Pb calc	Se calc							
#1	0.09045	0.45682							
#2	0.09283	0.45745							
Mean	0.09164	0.45714							
%RSD	1.84245	0.09733							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-7 SampleId2 :
Analysis commenced : 3/11/2013 15:46:24
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:04
[SAMPLE]

Position : TUBE33

Final concentrations6:28 User: STEVE WORKMAN

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00094	23.67679	0.10507	0.00555	0.37728	0.00458	-0.00036	48.58634	-0.00044
#2	-0.00090	23.78885	0.10099	0.00524	0.37834	0.00458	0.00104	48.75327	0.00008
Mean	-0.00092	23.73282	0.10303	0.00540	0.37781	0.00458	0.00034	48.66981	-0.00018
%RSD	3.22500	0.33389	2.79944	4.01794	0.19840	0.00488	289.60580	0.24252	203.82119

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01698	0.01417	0.02529	48.20370	8.16851	0.02003	10.66052	1.20848	0.18580
#2	0.01665	0.01369	0.02528	48.38828	8.18920	0.02010	10.69257	1.21321	0.18828
Mean	0.01681	0.01393	0.02528	48.29599	8.17886	0.02007	10.67654	1.21084	0.18704
%RSD	1.37250	2.47504	0.01996	0.27026	0.17885	0.23913	0.21227	0.27617	0.93627

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.13519	0.02016	2.01524	0.10285	0.09694	8.46069	0.01034	0.32259	0.31296
#2	0.13560	0.02073	2.04584	0.10282	0.09926	8.56579	0.01498	0.32329	0.31471
Mean	0.13539	0.02044	2.03054	0.10283	0.09810	8.51324	0.01266	0.32294	0.31384
%RSD	0.21404	1.97107	1.06575	0.01865	1.67300	0.87290	25.89930	0.15215	0.39313

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	9.67887	-0.00009	0.10904	0.16533	-0.00426	0.96551	0.73030	0.12032	0.02490
#2	9.72295	0.00101	0.10934	0.16577	-0.01646	0.97284	0.73417	0.12122	0.02512
Mean	9.70091	0.00046	0.10919	0.16555	-0.01036	0.96918	0.73224	0.12077	0.02501
%RSD	0.32131	169.88058	0.19485	0.18983	83.26136	0.53506	0.37393	0.53147	0.61809

	Pb calc	Se calc
#1	0.09891	0.31617
#2	0.10045	0.31756
Mean	0.09968	0.31687
%RSD	1.09185	0.31135

Method : Paragon2 File : 130311A
SampleId1 : 1303059-8 SampleId2 :
Analysis commenced : 3/11/2013 15:48:09
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:04
[SAMPLE]
Position : TUBE34

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00468	20.19415	0.19026	0.01788	0.31040	0.01977	-0.00014	28.00338	-0.00040
#2	-0.00486	20.46755	0.19294	0.01837	0.31329	0.01993	-0.00371	28.15552	-0.00100
Mean	-0.00477	20.33085	0.19160	0.01812	0.31184	0.01985	-0.00192	28.07945	-0.00070
%RSD	2.72035	0.95089	0.98914	1.91437	0.65455	0.57498	131.17167	0.38315	60.48504

ted: 3/12/2013 13:06:28 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01864	0.00084	0.00558	44.78861	5.57986	0.01751	6.76027	0.82407	0.46540
#2	0.01916	0.00122	0.00651	45.08228	5.63365	0.01762	6.80733	0.82935	0.46957
Mean	0.01890	0.00103	0.00604	44.93544	5.60676	0.01756	6.78380	0.82671	0.46748
%RSD	1.92770	25.70257	10.88854	0.46212	0.67834	0.47284	0.49046	0.45177	0.63123

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.15240	0.01606	1.70934	0.16957	0.18931	8.92241	0.00751	0.35870	0.35525
#2	0.15424	0.01705	1.73081	0.16952	0.18839	8.95245	0.00779	0.36802	0.36008
Mean	0.15332	0.01655	1.72008	0.16954	0.18885	8.93743	0.00765	0.36336	0.35767
%RSD	0.85073	4.21327	0.88281	0.01949	0.34134	0.23764	2.60098	1.81385	0.95459

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	10.30956	0.00941	0.12255	0.17191	-0.01331	41.81887	1.54181	0.12231	0.02481
#2	10.44450	0.01307	0.12365	0.17307	-0.00639	42.21735	1.55093	0.12358	0.02515
Mean	10.37703	0.01124	0.12310	0.17249	-0.00985	42.01811	1.54637	0.12295	0.02498
%RSD	0.91949	23.00480	0.63204	0.47825	49.63310	0.67059	0.41705	0.73088	0.97972

	Pb	Se
	calc	calc
#1	0.18273	0.35640
#2	0.18211	0.36273
Mean	0.18242	0.35956
%RSD	0.24173	1.24374

Method : Paragon2 File : 130311A

SampleId1 : 1303059-9

SampleId2 :

Analysis commenced : 3/11/2013 15:49:53

Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:04

[SAMPLE]

Position : TUBE35

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00014	16.04460	0.05589	0.00187	0.31785	0.00315	-0.00119	40.81100	-0.00026
#2	-0.00192	16.17955	0.05822	0.00144	0.32052	0.00314	0.00529	40.98778	0.00010
Mean	-0.00103	16.11207	0.05705	0.00166	0.31919	0.00315	0.00205	40.89939	-0.00008
%RSD	122.44277	0.59228	2.88897	18.33672	0.59095	0.09357	223.57511	0.30563	304.86902

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01167	0.01117	0.01497	34.39960	5.04979	0.01205	6.55482	0.76378	0.07515
#2	0.01078	0.01099	0.01422	34.62922	5.09904	0.01217	6.58775	0.76957	0.07274
Mean	0.01123	0.01108	0.01459	34.51441	5.07442	0.01211	6.57129	0.76667	0.07394
%RSD	5.59357	1.16364	3.65901	0.47042	0.68626	0.71621	0.35439	0.53331	2.30545

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.09258	0.01564	1.46364	0.04829	0.04440	2.28558	0.00806	0.09174	0.10219
#2	0.09340	0.01540	1.47017	0.04731	0.04596	2.29679	0.00581	0.10673	0.10538
Mean	0.09299	0.01552	1.46690	0.04780	0.04518	2.29118	0.00694	0.09924	0.10379
%RSD	0.62290	1.09826	0.31483	1.44773	2.44419	0.34594	22.95892	10.67795	2.17423

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	8.69496	0.00208	0.09683	0.18418	-0.01106	0.43894	0.50868	0.08782	0.01113
#2	8.77543	-0.00085	0.09758	0.18631	-0.00965	0.44091	0.51309	0.08782	0.01074
Mean	8.73519	0.00062	0.09721	0.18525	-0.01036	0.43993	0.51088	0.08782	0.01093
%RSD	0.65140	335.90354	0.54714	0.81184	9.63714	0.31624	0.61127	0.00000	2.49773

	Pb calc	Se calc
#1	0.04569	0.09871
#2	0.04641	0.10583
Mean	0.04605	0.10227
%RSD	1.09900	4.92191

Method : Paragon2 File : 130311A
SampleId1 : 1303059-10 SampleId2 :
Analysis commenced : 3/11/2013 15:51:38
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:05
[SAMPLE]

Position : TUBE36

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00229	17.87528	0.06218	0.00218	0.34387	0.00309	0.00169	58.22503	0.00033
#2	-0.00071	17.94050	0.06311	0.00095	0.34457	0.00312	0.00327	58.38490	-0.00030
Mean	-0.00150	17.90789	0.06265	0.00156	0.34422	0.00311	0.00248	58.30497	0.00002
%RSD	74.49094	0.25754	1.05239	55.47322	0.14264	0.51165	44.97124	0.19389	2828.93572

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01668	0.01389	0.02756	39.23802	5.68318	0.01341	10.39501	0.92150	0.06485
#2	0.01691	0.01453	0.02765	39.32219	5.70095	0.01343	10.44120	0.92364	0.06577
Mean	0.01679	0.01421	0.02760	39.28011	5.69206	0.01342	10.41811	0.92257	0.06531
%RSD	0.98014	3.18911	0.23122	0.15152	0.22079	0.09626	0.31348	0.16397	0.98763

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.24014	0.03164	1.43471	0.05152	0.04998	3.89315	0.00533	0.14145	0.13253
#2	0.24133	0.03276	1.45874	0.05262	0.04674	3.88193	0.00822	0.13664	0.13200
Mean	0.24073	0.03220	1.44673	0.05207	0.04836	3.88754	0.00678	0.13904	0.13226
%RSD	0.34962	2.45452	1.17422	1.49819	4.73368	0.20412	30.22958	2.44524	0.28218

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	7.80719	-0.00089	0.10521	0.21922	-0.00883	0.37378	0.44543	0.09181	0.00867
#2	7.83937	-0.00198	0.10539	0.22003	-0.00784	0.37778	0.44667	0.09236	0.00884
Mean	7.82328	-0.00144	0.10530	0.21962	-0.00834	0.37578	0.44605	0.09209	0.00875
%RSD	0.29087	54.10908	0.12628	0.26059	8.42703	0.75322	0.19577	0.41816	1.36722

	Pb calc	Se calc
#1	0.05049	0.13550
#2	0.04870	0.13354
Mean	0.04959	0.13452
%RSD	2.55496	1.02670

Method : Paragon2 File : 130311A
SampleId1 : 1303059-11 SampleId2 :
Analysis commenced : 3/11/2013 15:53:23
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:05

[SAMPLE]

Position : TUBE37

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00069	15.49893	0.08514	0.00113	0.26977	0.00367	0.00676	46.04180	-0.00028
#2	-0.00046	15.39858	0.07966	0.00064	0.26824	0.00363	0.00256	45.92903	-0.00062
Mean	-0.00057	15.44875	0.08240	0.00089	0.26900	0.00365	0.00466	45.98542	-0.00045
%RSD	28.82513	0.45931	4.70044	39.02995	0.40331	0.90602	63.67133	0.17339	53.87672

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01165	0.00980	0.01763	36.57590	3.93928	0.01184	6.72608	0.80232	0.09124
#2	0.01235	0.01019	0.01884	36.48904	3.91919	0.01177	6.70538	0.79986	0.09261
Mean	0.01200	0.00999	0.01823	36.53247	3.92923	0.01180	6.71573	0.80109	0.09193
%RSD	4.13149	2.79809	4.70889	0.16814	0.36161	0.40659	0.21798	0.21642	1.05255

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.12154	0.01810	1.46270	0.07001	0.06663	4.05775	0.00488	0.23995	0.23070
#2	0.12088	0.01871	1.44894	0.07277	0.06604	4.02782	0.00686	0.24450	0.23899
Mean	0.12121	0.01840	1.45582	0.07139	0.06633	4.04279	0.00587	0.24222	0.23485
%RSD	0.38244	2.35778	0.66842	2.72949	0.63257	0.52348	23.85457	1.32778	2.49578

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	8.41920	0.00120	0.08273	0.31651	-0.01045	0.41980	0.70340	0.09163	0.02032
#2	8.38756	0.00303	0.08228	0.31514	-0.01047	0.42986	0.70029	0.09200	0.02031
Mean	8.40338	0.00211	0.08250	0.31582	-0.01046	0.42483	0.70185	0.09181	0.02032
%RSD	0.26619	61.32463	0.38674	0.30728	0.17220	1.67459	0.31331	0.27960	0.01533

	Pb calc	Se calc
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#1	0.06775	0.23378
#2	0.06828	0.24083
Mean	0.06802	0.23730
%RSD	0.54251	2.09877

ser: STEVE WORKMAN

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 15:55:38
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:05
[CV]

Position : STD1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.20022	49.23908	0.52533	0.99852	1.01071	0.49539	0.54414	49.64873	0.52586
#2	0.19730	49.08326	0.52452	0.99025	1.00847	0.49425	0.52634	49.39246	0.52304
Mean	0.19876	49.16117	0.52492	0.99438	1.00959	0.49482	0.53524	49.52060	0.52445
%RSD	1.03901	0.22412	0.10984	0.58852	0.15671	0.16284	2.35153	0.36593	0.37942

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.49415	0.99049	1.02400	19.39066	49.33417	0.51873	49.08051	0.97922	0.99793
#2	0.49116	0.98667	1.01900	19.33094	49.29027	0.51842	48.83195	0.97663	0.99134
Mean	0.49265	0.98858	1.02150	19.36080	49.31222	0.51857	48.95623	0.97792	0.99464
%RSD	0.42942	0.27271	0.34601	0.21809	0.06295	0.04288	0.35900	0.18662	0.46865

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	48.77367	1.03508	4.82821	1.00817	0.94822	4.90726	0.50139	1.00801	0.95251
#2	48.66517	1.02466	4.81315	0.98437	0.97965	4.89229	0.49466	1.00270	0.98393
Mean	48.71942	1.02987	4.82068	0.99627	0.96394	4.89978	0.49803	1.00536	0.96822
%RSD	0.15748	0.71482	0.22099	1.68909	2.30548	0.21609	0.95569	0.37353	2.29436

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.81050	1.03077	0.50012	0.47895	0.51851	4.91036	0.49496	0.96545	0.99880
#2	4.78511	1.03114	0.49919	0.47837	0.51108	4.83800	0.49040	0.95853	0.99662
Mean	4.79780	1.03096	0.49966	0.47866	0.51479	4.87418	0.49268	0.96199	0.99771
%RSD	0.37428	0.02515	0.13087	0.08552	1.02176	1.04967	0.65406	0.50866	0.15416

	Pb calc	Se calc
#1	0.96818	0.97099
#2	0.98122	0.99018
Mean	0.97470	0.98059
%RSD	0.94586	1.38351

Method : Paragon2 File : 130311A
SampleId1 : CCB SampleId2 :
Analysis commenced : 3/11/2013 15:57:29

Printed : 3/12/2013 13:06:05
[CB]

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00084	0.08369	0.00134	-0.00623	0.00004	0.00090	-0.00206	-0.04555	-0.00001
#2	0.00014	0.08419	0.00192	-0.00788	-0.00003	0.00087	0.00284	-0.04726	-0.00081
Mean	-0.00035	0.08394	0.00163	-0.00705	0.00000	0.00088	0.00039	-0.04641	-0.00041
%RSD	198.35503	0.42550	25.24478	16.60074	1393.09002	2.56171	880.85483	2.61785	138.92983
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00048	0.00009	-0.00238	0.01265	-0.10849	-0.00257	0.00110	-0.00017	-0.00017
#2	-0.00104	-0.00019	-0.00180	0.01257	-0.13012	-0.00260	-0.00078	-0.00017	0.00016
Mean	-0.00076	-0.00005	-0.00209	0.01261	-0.11931	-0.00258	0.00016	-0.00017	-0.00001
%RSD	52.29861	399.87766	19.83791	0.43681	12.81712	0.71462	839.76999	0.00000	3731.31533
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03097	-0.00086	-0.01404	0.00173	-0.00007	-0.00289	0.00610	-0.00091	0.00145
#2	0.03035	-0.00115	-0.01102	0.00067	0.00224	0.00084	0.00755	-0.00848	0.00604
Mean	0.03066	-0.00100	-0.01253	0.00120	0.00109	-0.00102	0.00683	-0.00469	0.00374
%RSD	1.41569	20.08352	17.03577	62.56303	149.96676	258.21599	15.09189	114.13939	86.74851
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00097	0.00193	-0.00130	-0.00251	0.00018	-0.01422	0.00002	0.00125	0.00058
#2	0.00062	0.00010	-0.00130	-0.00278	-0.00544	-0.03632	-0.00019	0.00016	0.00028
Mean	0.00080	0.00102	-0.00130	-0.00264	-0.00263	-0.02527	-0.00008	0.00071	0.00043
%RSD	30.79231	127.02217	0.00000	7.21715	151.11248	61.82537	180.63254	109.13578	49.36079
	Pb	Se							
	calc	calc							
#1	0.00053	0.00066							
#2	0.00172	0.00120							
Mean	0.00113	0.00093							
%RSD	74.44156	40.91526							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:05

SampleId1 : 1303059-12

SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 15:59:21

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE38

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00059	26.97089	0.01789	0.00377	0.44960	0.00309	-0.00009	11.34837	-0.00019
#2	-0.00127	27.04082	0.01778	0.00353	0.45084	0.00307	-0.00043	11.35439	0.00013

Mean	-0.00093	27.00586	0.01783	0.00365	0.45022	0.00308	-0.00026	11.35138	-0.00003
%RSD	51.71657	0.18310	0.46214	4.75417	0.19527	0.44384	94.04535	0.03750	685.41748
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01690	0.02254	0.03102	44.65341	6.40986	0.01653	7.76522	1.09358	0.00035
#2	0.01737	0.02291	0.03204	44.70032	6.43358	0.01653	7.75895	1.09477	0.00146
Mean	0.01713	0.02273	0.03153	44.67687	6.42172	0.01653	7.76209	1.09418	0.00091
%RSD	1.92714	1.16499	2.29775	0.07425	0.26120	0.01116	0.05718	0.07736	86.44810
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.11367	0.02844	1.71377	0.04765	0.04538	0.79932	0.00523	0.00365	0.00154
#2	0.11355	0.02840	1.71681	0.04602	0.04456	0.80678	0.00496	-0.00884	0.00722
Mean	0.11361	0.02842	1.71529	0.04684	0.04497	0.80305	0.00510	-0.00260	0.00438
%RSD	0.07650	0.10906	0.12509	2.46224	1.30197	0.65728	3.65283	340.42568	91.64411
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	11.53118	0.00347	0.07053	0.25042	-0.00790	0.00984	0.06472	0.11596	0.01896
#2	11.59182	-0.00202	0.07070	0.25129	-0.01682	0.02122	0.06470	0.11578	0.01869
Mean	11.56150	0.00072	0.07061	0.25085	-0.01236	0.01553	0.06471	0.11587	0.01882
%RSD	0.37088	536.62555	0.17884	0.24379	51.02426	51.79394	0.02306	0.11079	1.01060
	Pb	Se							
	calc	calc							
#1	0.04614	0.00225							
#2	0.04504	0.00187							
Mean	0.04559	0.00206							
%RSD	1.69890	12.72774							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-13 SampleId2 :
Analysis commenced : 3/11/2013 16:01:06
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:06
[SAMPLE]

Position : TUBE39

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00250	59.88056	0.05799	0.01555	0.84056	0.00602	0.00528	175.72937	0.00042
#2	-0.00106	59.64995	0.04831	0.01665	0.83774	0.00602	0.00527	175.40987	0.00096
Mean	-0.00178	59.76526	0.05315	0.01610	0.83915	0.00602	0.00528	175.56962	0.00069
%RSD	56.94115	0.27284	12.87003	4.84883	0.23777	0.01115	0.05571	0.12868	55.84025
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04473	0.05799	0.07807	147.08126	19.15940	0.08182	61.04868	1.89753	0.00341
#2	0.04514	0.05775	0.07675	146.97229	19.15216	0.08177	60.96776	1.89607	0.00413
Mean	0.04493	0.05787	0.07741	147.02677	19.15578	0.08179	61.00822	1.89680	0.00377

%RSD	0.65847	0.29875	1.20815	0.05241	0.02673	0.04961	0.09379	0.05433	13.43264
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	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.59040	0.08159	4.55782	0.10707	0.09974	2.42009	0.00773	0.00487	0.01524
#2	0.59081	0.08096	4.59287	0.11044	0.09716	2.39767	0.00906	0.00267	0.01000
Mean	0.59061	0.08127	4.57535	0.10875	0.09845	2.40888	0.00840	0.00377	0.01262
%RSD	0.04938	0.55299	0.54173	2.19514	1.85608	0.65812	11.16994	41.15064	29.36149

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	14.16745	0.00533	0.43174	0.22568	-0.01247	0.13261	0.13629	0.37223	0.03112
#2	14.13903	0.00716	0.43024	0.22470	-0.01741	0.13732	0.13669	0.37060	0.03182
Mean	14.15324	0.00624	0.43099	0.22519	-0.01494	0.13496	0.13649	0.37141	0.03147
%RSD	0.14202	20.73894	0.24600	0.30897	23.38676	2.46628	0.20497	0.31135	1.56416

	Pb	Se
	calc	calc
#1	0.10218	0.01179
#2	0.10158	0.00756
Mean	0.10188	0.00967
%RSD	0.41603	30.89150

Method : Paragon2 File : 130311A
SampleId1 : 1303059-14 SampleId2 :
Analysis commenced : 3/11/2013 16:02:51
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:06

[SAMPLE]

Position : TUBE40

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00149	8.33471	0.00752	-0.00770	0.23989	0.00127	-0.00362	2.55717	-0.00043
#2	-0.00067	8.31921	0.00624	-0.00665	0.23993	0.00126	-0.00572	2.55356	-0.00059
Mean	-0.00108	8.32696	0.00688	-0.00718	0.23991	0.00127	-0.00467	2.55537	-0.00051
%RSD	53.38743	0.13158	13.18218	10.27366	0.01077	0.20880	31.82785	0.09973	22.95145

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00460	0.00494	0.00261	21.23932	1.06475	0.00168	2.16321	0.35831	-0.00004
#2	0.00464	0.00498	0.00271	21.22385	1.06687	0.00171	2.16634	0.35824	0.00094
Mean	0.00462	0.00496	0.00266	21.23159	1.06581	0.00170	2.16477	0.35827	0.00045
%RSD	0.69925	0.58578	2.53739	0.05153	0.14059	1.19662	0.10225	0.01237	153.60206

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04615	0.00911	0.44179	0.01041	0.01399	0.13886	0.00273	-0.01067	0.00533
#2	0.04566	0.00900	0.44621	0.01510	0.01506	0.12767	0.00273	-0.00957	0.00398
Mean	0.04590	0.00906	0.44400	0.01275	0.01452	0.13327	0.00273	-0.01012	0.00465
%RSD	0.75659	0.85559	0.70382	26.03752	5.21031	5.93801	0.12558	7.67316	20.56124

ted: 3/12/2013 13:06:28 User: STEVE WORKMAN

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	5.81291	-0.00304	0.01906	0.18704	-0.01557	-0.02007	0.02763	0.03990	0.00918
#2	5.81425	-0.00158	0.01911	0.18755	-0.01391	-0.02141	0.02778	0.03954	0.00927
Mean	5.81358	-0.00231	0.01908	0.18730	-0.01474	-0.02074	0.02771	0.03972	0.00922
%RSD	0.01639	44.72830	0.20887	0.19175	7.95968	4.55615	0.37186	0.64614	0.70951

	Pb calc	Se calc
#1	0.01279	0.00000
#2	0.01507	-0.00053
Mean	0.01393	-0.00026
%RSD	11.55942	143.49448

Method : Paragon2 File : 130311A

SampleId1 : 1303059-15 SampleId2 :

Analysis commenced : 3/11/2013 16:04:35

Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:06

[SAMPLE]

Position : TUBE41

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00124	8.13870	0.00729	-0.00678	0.15995	0.00123	-0.00131	2.05182	-0.00018
#2	-0.00078	8.12270	0.00775	-0.00641	0.15922	0.00120	-0.00218	2.04806	-0.00044
Mean	-0.00101	8.13070	0.00752	-0.00659	0.15959	0.00122	-0.00174	2.04994	-0.00031
%RSD	32.62798	0.13915	4.38480	3.94641	0.32353	1.36885	35.30411	0.12964	60.17588

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00436	0.00573	0.00440	18.66660	1.57422	0.00194	1.81982	0.49053	0.00048
#2	0.00473	0.00594	0.00467	18.62916	1.58883	0.00194	1.81075	0.48997	0.00139
Mean	0.00455	0.00583	0.00454	18.64788	1.58152	0.00194	1.81528	0.49025	0.00094
%RSD	5.81015	2.51234	4.08945	0.14198	0.65316	0.09530	0.35357	0.08142	68.72150

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.04513	0.00753	0.55136	0.00961	0.01407	0.10529	0.00259	0.00005	0.00817
#2	0.04549	0.00738	0.54810	0.01116	0.01329	0.11648	0.00523	-0.00392	0.00447
Mean	0.04531	0.00746	0.54973	0.01039	0.01368	0.11089	0.00391	-0.00193	0.00632
%RSD	0.57487	1.45483	0.41898	10.53220	4.02502	7.13650	47.78613	144.96964	41.39284

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	5.69785	0.00023	0.01895	0.20179	-0.01244	-0.02229	0.02550	0.03972	0.00724
#2	5.68776	-0.00160	0.01888	0.20129	-0.00266	-0.00152	0.02528	0.04081	0.00732
Mean	5.69280	-0.00068	0.01891	0.20154	-0.00755	-0.01190	0.02539	0.04027	0.00728
%RSD	0.12537	189.37831	0.28098	0.17540	91.56947	123.34889	0.60089	1.91221	0.81952

	Pb	Seser: STEVE WORKMAN
	calc	calc
#1	0.01259	0.00546
#2	0.01258	0.00168
Mean	0.01259	0.00357
%RSD	0.02429	75.00503

Method : Paragon2 File : 130311A
SampleId1 : 1303060-1 **SampleId2 :**
Analysis commenced : 3/11/2013 16:06:17
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:06

[SAMPLE]

Position : TUBE44

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00258	63.67635	0.05204	0.02597	0.77494	0.00652	0.00455	144.83513	0.00026
#2	-0.00191	64.02846	0.05857	0.02640	0.77728	0.00653	0.01139	145.20039	0.00094
Mean	-0.00224	63.85240	0.05531	0.02619	0.77611	0.00652	0.00797	145.01776	0.00060
%RSD	20.93732	0.38993	8.34483	1.15920	0.21361	0.10078	60.64827	0.17810	80.82593

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05127	0.06146	0.09557	151.79201	20.01375	0.07830	40.42898	1.95324	0.01214
#2	0.05319	0.06240	0.09604	152.19730	20.10726	0.07865	40.59260	1.95882	0.01156
Mean	0.05223	0.06193	0.09581	151.99466	20.06051	0.07848	40.51079	1.95603	0.01185
%RSD	2.59034	1.07303	0.34168	0.18855	0.32962	0.31732	0.28559	0.20167	3.49854

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.59601	0.08915	3.65889	0.11048	0.10576	4.42070	0.00786	0.01211	0.03111
#2	0.59865	0.08992	3.68400	0.11502	0.10180	4.41695	0.01101	0.02201	0.02514
Mean	0.59733	0.08954	3.67145	0.11275	0.10378	4.41882	0.00944	0.01706	0.02813
%RSD	0.31252	0.60581	0.48361	2.84478	2.69726	0.05988	23.58657	41.04080	15.01077

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	17.66592	0.00345	0.55833	0.26575	-0.02230	0.23421	0.18120	0.39022	0.03280
#2	17.75671	0.00345	0.56009	0.26798	-0.01637	0.24218	0.18199	0.38986	0.03338
Mean	17.71132	0.00345	0.55921	0.26686	-0.01934	0.23820	0.18160	0.39004	0.03309
%RSD	0.36246	0.05318	0.22324	0.59075	21.68044	2.36378	0.30814	0.06589	1.24174

	Pb	Se
	calc	calc
#1	0.10733	0.02479
#2	0.10620	0.02410
Mean	0.10677	0.02444
%RSD	0.74836	1.98311

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:06

SampleId1 : 1303060-1D SampleId2 :
 Analysis commenced : 3/11/2013 16:08:02
 Dilution ratio : 1.00000 to 1.00000 Tray :

[SAMPLE]
 Position : TUBE45

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00292	63.04325	0.05449	0.02628	0.76600	0.00650	0.00175	144.33224	0.00085
#2	-0.00151	63.56477	0.05857	0.02610	0.76966	0.00654	0.01070	145.12762	0.00097
Mean	-0.00221	63.30401	0.05653	0.02619	0.76783	0.00652	0.00622	144.72993	0.00091
%RSD	45.13353	0.58254	5.10260	0.49680	0.33735	0.39934	101.62091	0.38860	9.14091
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.05144	0.06068	0.09378	149.65366	19.80382	0.07751	39.86309	1.89100	0.01104
#2	0.05284	0.06208	0.09488	150.49796	19.94610	0.07795	40.15461	1.90234	0.01195
Mean	0.05214	0.06138	0.09433	150.07581	19.87496	0.07773	40.00885	1.89667	0.01149
%RSD	1.90023	1.61804	0.82150	0.39781	0.50622	0.40104	0.51523	0.42287	5.61185
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.59420	0.08779	3.72320	0.10883	0.10149	4.37205	0.00642	0.00084	0.02717
#2	0.59869	0.09040	3.70794	0.11718	0.09968	4.41321	0.01168	0.01627	0.02091
Mean	0.59644	0.08910	3.71557	0.11301	0.10059	4.39263	0.00905	0.00856	0.02404
%RSD	0.53305	2.06989	0.29033	5.22512	1.27006	0.66263	41.10391	127.45818	18.41834
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	15.72923	0.00345	0.55381	0.26833	-0.01911	0.23795	0.18305	0.38877	0.03384
#2	15.84770	0.00600	0.55581	0.27066	-0.02141	0.27262	0.18413	0.38913	0.03486
Mean	15.78846	0.00473	0.55481	0.26949	-0.02026	0.25529	0.18359	0.38895	0.03435
%RSD	0.53058	38.27725	0.25508	0.61205	8.03565	9.60311	0.41755	0.06607	2.09831
	Pb calc	Se calc							
#1	0.10393	0.01841							
#2	0.10551	0.01937							
Mean	0.10472	0.01889							
%RSD	1.06395	3.59007							

Method : Paragon2 File : 130311A
 SampleId1 : 1303060-1L 5X SampleId2 :
 Analysis commenced : 3/11/2013 16:09:47
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:06
 [SAMPLE]
 Position : TUBE46

Final concentrations

Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
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#1	-0.00121	13.36673	0.01113	-0.00242	0.16200	0.00143	0.00091	29.93306	-0.00035
#2	-0.00122	13.46103	0.01311	-0.00150	0.16266	0.00146	-0.00259	30.06157	-0.00020
Mean	-0.00122	13.41388	0.01212	-0.00196	0.16233	0.00145	-0.00084	29.99732	-0.00028
%RSD	0.49754	0.49712	11.55784	33.13904	0.28627	1.31581	294.18518	0.30293	37.29966

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01009	0.01242	0.01633	29.48193	3.29514	0.01150	8.64096	0.41986	0.00100
#2	0.01061	0.01230	0.01641	29.60905	3.31333	0.01159	8.67581	0.42186	0.00224
Mean	0.01035	0.01236	0.01637	29.54549	3.30424	0.01155	8.65838	0.42086	0.00162
%RSD	3.51337	0.73406	0.35890	0.30425	0.38920	0.54347	0.28459	0.33707	53.94464

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.10503	0.01900	0.78736	0.02078	0.02422	0.92249	0.00446	0.01066	0.00528
#2	0.10556	0.01755	0.78294	0.02235	0.01810	0.94115	0.00460	0.01342	0.01151
Mean	0.10530	0.01827	0.78515	0.02157	0.02116	0.93182	0.00453	0.01204	0.00840
%RSD	0.35762	5.59763	0.39839	5.15380	20.43054	1.41625	2.19535	16.20496	52.51275

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.84834	0.00150	0.11548	0.05415	-0.01256	0.00991	0.03687	0.08474	0.00601
#2	3.87761	-0.00143	0.11599	0.05436	-0.01022	0.02127	0.03737	0.08564	0.00617
Mean	3.86297	0.00004	0.11574	0.05425	-0.01139	0.01559	0.03712	0.08519	0.00609
%RSD	0.53577	5545.88185	0.31024	0.27937	14.50303	51.53309	0.95402	0.75334	1.85323

	Pb	Se
	calc	calc
#1	0.02307	0.00707
#2	0.01952	0.01215
Mean	0.02129	0.00961
%RSD	11.80237	37.36411

Method : Paragon2 File : 130311A
SampleId1 : 1303060-1MS SampleId2 :
Analysis commenced : 3/11/2013 16:11:31
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:07
[SAMPLE]

Position : TUBE47

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09375	87.62511	1.04468	0.84342	1.78895	0.05668	0.00812	181.61343	0.05282
#2	0.09255	87.05970	1.03967	0.83974	1.77970	0.05650	0.00636	180.88473	0.05297
Mean	0.09315	87.34240	1.04218	0.84158	1.78433	0.05659	0.00724	181.24908	0.05289
%RSD	0.91192	0.45774	0.33962	0.30908	0.36639	0.21570	17.16095	0.28428	0.20127

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.53352	0.27209	0.36121	157.54498	62.39651	0.62378	81.32670	2.36348	0.92412

#2	0.53169	0.27098	0.35979	157.05853	62.06271	0.62100	81.00190	2.35572	0.92190
Mean	0.53261	0.27154	0.36050	157.30176	62.22961	0.62239	81.16430	2.35960	0.92301
%RSD	0.24311	0.28816	0.27689	0.21867	0.37929	0.31596	0.28297	0.23243	0.16998

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	40.59479	0.60091	3.71005	0.62565	0.57187	4.83240	0.30866	1.74520	1.63493
#2	40.37997	0.59779	3.69198	0.62204	0.58548	4.80994	0.30417	1.73164	1.68719
Mean	40.48738	0.59935	3.70102	0.62384	0.57867	4.82117	0.30642	1.73842	1.66106
%RSD	0.37518	0.36719	0.34527	0.40906	1.66316	0.32941	1.03611	0.55146	2.22476

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	18.14587	0.50644	1.06840	0.66789	1.89596	0.24456	0.69338	0.86967	0.03194
#2	18.07676	0.50242	1.06264	0.66608	1.88874	0.24532	0.68915	0.86840	0.03182
Mean	18.11131	0.50443	1.06552	0.66698	1.89235	0.24494	0.69126	0.86904	0.03188
%RSD	0.26981	0.56398	0.38265	0.19158	0.26978	0.21873	0.43231	0.10369	0.26877

	Pb	Se
	calc	calc
#1	0.58977	1.67165
#2	0.59765	1.70199
Mean	0.59371	1.68682
%RSD	0.93809	1.27200

Method : Paragon2 File : 130311A
SampleId1 : 1303060-1MSD SampleId2 :
Analysis commenced : 3/11/2013 16:13:17
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:07
[SAMPLE]
Position : TUBE48

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09235	88.18015	1.01313	0.82306	1.76287	0.05572	0.00579	181.28491	0.05088
#2	0.09332	88.25085	1.01686	0.82269	1.76446	0.05569	0.00002	181.01219	0.05177
Mean	0.09284	88.21550	1.01499	0.82288	1.76366	0.05571	0.00290	181.14855	0.05133
%RSD	0.74216	0.05667	0.25952	0.03161	0.06350	0.03107	140.68099	0.10645	1.22616

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.52390	0.26607	0.35387	157.97401	61.90834	0.61268	80.50070	2.36583	0.90239
#2	0.52357	0.26607	0.35416	157.89174	61.97813	0.61329	80.39905	2.36666	0.90323
Mean	0.52374	0.26607	0.35401	157.93287	61.94323	0.61298	80.44988	2.36624	0.90281
%RSD	0.04425	0.00235	0.05962	0.03684	0.07967	0.07040	0.08935	0.02470	0.06645

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	39.81463	0.59034	3.66922	0.59330	0.55326	4.38327	0.29819	1.68517	1.63016
#2	39.83839	0.58607	3.68799	0.59244	0.55862	4.39076	0.29502	1.69760	1.66311

Mean	39.82651	0.58820	3.67860	0.59287	0.55594	4.38702	0.29661	1.69138	1.64663
%RSD	0.04218	0.51379	0.36088	0.10287	0.68200	0.12063	0.75511	0.51980	1.41527
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	17.72117	0.49219	1.05402	0.65015	1.84119	0.24783	0.68220	0.89352	0.03245
#2	17.74632	0.49987	1.05455	0.65154	1.85026	0.23110	0.68087	0.89298	0.03200
Mean	17.73375	0.49603	1.05428	0.65084	1.84573	0.23947	0.68154	0.89325	0.03223
%RSD	0.10030	1.09525	0.03562	0.15070	0.34743	4.93915	0.13740	0.04324	0.98312
	Pb	Se							
	calc	calc							
#1	0.56659	1.64847							
#2	0.56988	1.67460							
Mean	0.56824	1.66154							
%RSD	0.40931	1.11172							

Method : Paragon2 File : 130311A
SampleId1 : 1303060-2 SampleId2 :
Analysis commenced : 3/11/2013 16:15:02
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:07

[SAMPLE]

Position : TUBE49

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00229	47.39541	0.23151	0.01775	0.97301	0.01145	0.01013	119.81962	0.00070
#2	-0.00285	47.35792	0.22091	0.01683	0.97352	0.01140	0.00592	119.55766	0.00055
Mean	-0.00257	47.37667	0.22621	0.01729	0.97327	0.01142	0.00803	119.68864	0.00062
%RSD	15.44084	0.05595	3.31467	3.76128	0.03730	0.28283	37.06088	0.15476	16.46646
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03623	0.03076	0.05942	122.23328	15.37989	0.06480	23.03516	1.85432	0.37509
#2	0.03568	0.03092	0.06048	122.10377	15.37317	0.06469	23.01210	1.85388	0.37301
Mean	0.03596	0.03084	0.05995	122.16852	15.37653	0.06474	23.02363	1.85410	0.37405
%RSD	1.09727	0.35481	1.24534	0.07496	0.03092	0.12822	0.07083	0.01691	0.39438
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.41803	0.04346	2.85042	0.30235	0.27967	34.72303	0.01406	0.86119	0.83582
#2	0.41659	0.04365	2.85909	0.29820	0.28286	34.81098	0.00890	0.88006	0.86420
Mean	0.41731	0.04355	2.85475	0.30027	0.28127	34.76700	0.01148	0.87063	0.85001
%RSD	0.24402	0.32024	0.21459	0.97728	0.80195	0.17888	31.76133	1.53256	2.36042
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	21.20613	0.00936	0.38799	0.22093	-0.01914	6.13682	3.03746	0.23762	0.06074
#2	21.20733	0.00387	0.38796	0.22009	-0.02721	6.11607	3.03663	0.23671	0.06068
Mean	21.20673	0.00661	0.38798	0.22051	-0.02318	6.12645	3.03704	0.23716	0.06071

%RSD	0.00397	58.67607	0.00515	0.26718	24.61088	0.23951	0.01925	0.27075	0.07230
	Pb	Se							
	calc	calc							
#1	0.28722	0.84427							
#2	0.28797	0.86948							
Mean	0.28760	0.85688							
%RSD	0.18336	2.08032							

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 16:17:17
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:07

[CV]

Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19996	49.00328	0.52685	0.99227	1.00730	0.49503	0.53039	49.63763	0.52377
#2	0.20122	49.37894	0.52487	0.99429	1.01236	0.49697	0.53922	49.77574	0.52688
Mean	0.20059	49.19111	0.52586	0.99328	1.00983	0.49600	0.53481	49.70668	0.52533
%RSD	0.44253	0.54000	0.26627	0.14402	0.35444	0.27769	1.16710	0.19647	0.41873

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.49316	0.99077	1.01633	19.32422	49.30733	0.51616	49.05814	0.97752	1.00492
#2	0.49531	0.99342	1.02277	19.40936	49.66009	0.51924	49.24058	0.98375	0.99963
Mean	0.49424	0.99209	1.01955	19.36679	49.48371	0.51770	49.14936	0.98063	1.00227
%RSD	0.30765	0.18891	0.44677	0.31085	0.50409	0.42137	0.26247	0.44937	0.37299

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.68359	1.02420	4.65946	1.00237	0.94985	4.79871	0.49799	0.98743	0.93988
#2	48.96844	1.03023	4.68299	1.00463	0.96574	4.80994	0.49341	1.00581	0.96950
Mean	48.82602	1.02722	4.67123	1.00350	0.95780	4.80432	0.49570	0.99662	0.95469
%RSD	0.41253	0.41491	0.35621	0.15882	1.17335	0.16528	0.65219	1.30416	2.19366

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.78155	1.02931	0.49798	0.47951	0.51787	4.88022	0.49459	0.96909	0.99700
#2	4.81691	1.02894	0.50080	0.48224	0.51660	4.91638	0.49698	0.96982	1.00136
Mean	4.79923	1.02912	0.49939	0.48088	0.51724	4.89830	0.49578	0.96945	0.99918
%RSD	0.52100	0.02537	0.39949	0.40228	0.17246	0.52211	0.34123	0.05313	0.30806

	Pb	Se							
	calc	calc							
#1	0.96734	0.95571							
#2	0.97869	0.98159							
Mean	0.97302	0.96865							
%RSD	0.82493	1.88891							

ted: 3/12/2013 13:06:29 User: STEVE WORKMAN
 Method : Paragon2 File : 130311A
 SampleId1 : CCB SampleId2 :
 Analysis commenced : 3/11/2013 16:19:08
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:07
 [CB]
 Position : STD2

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00023	0.09422	-0.00099	-0.00457	0.00022	0.00042	0.00144	-0.03524	0.00020
#2	0.00036	0.08963	-0.00041	-0.00721	0.00019	0.00040	-0.00591	-0.03571	-0.00014
Mean	0.00030	0.09193	-0.00070	-0.00589	0.00020	0.00041	-0.00223	-0.03547	0.00003
%RSD	33.00286	3.52993	58.97471	31.67042	12.62350	2.63775	232.94747	0.93402	836.89683
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	-0.00057	-0.00020	-0.00228	0.01841	-0.09721	-0.00248	0.00798	0.00002	0.00120
#2	-0.00052	-0.00007	-0.00163	0.01771	-0.10896	-0.00251	0.00891	0.00002	0.00081
Mean	-0.00055	-0.00013	-0.00195	0.01806	-0.10309	-0.00249	0.00845	0.00002	0.00100
%RSD	6.03652	70.43620	23.51308	2.74459	8.06199	0.81448	7.85524	0.00000	27.54026
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.03739	0.00034	-0.01056	0.00195	0.00135	-0.00662	0.00505	0.00087	-0.00071
#2	0.03600	-0.00117	-0.01730	-0.00182	0.00100	-0.02900	0.00334	0.00198	0.00100
Mean	0.03669	-0.00041	-0.01393	0.00006	0.00118	-0.01781	0.00420	0.00143	0.00014
%RSD	2.68129	259.92680	34.19991	4205.65514	20.63322	88.87229	28.96618	54.98172	848.47320
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	0.00108	0.00010	-0.00125	-0.00245	-0.01056	-0.02427	0.00059	0.00089	0.00068
#2	-0.00036	-0.00099	-0.00125	-0.00247	-0.00340	-0.01490	0.00038	0.00071	0.00062
Mean	0.00036	-0.00045	-0.00125	-0.00246	-0.00698	-0.01958	0.00049	0.00080	0.00065
%RSD	282.51706	174.20678	0.00000	0.68514	72.57676	33.85175	30.40426	16.11645	6.70075
	Pb calc	Se calc							
#1	0.00155	-0.00019							
#2	0.00006	0.00132							
Mean	0.00081	0.00057							
%RSD	130.32816	187.45722							

Method : Paragon2 File : 130311A
 SampleId1 : 1303060-3 SampleId2 :
 Analysis commenced : 3/11/2013 16:20:59
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:08
 [SAMPLE]
 Position : TUBE50

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00106	50.54780	0.09598	0.02070	0.77384	0.00687	-0.00146	72.76023	0.00061
#2	-0.00144	51.16583	0.09027	0.01978	0.78179	0.00688	0.00029	73.34035	0.00120
Mean	-0.00125	50.85682	0.09312	0.02024	0.77781	0.00688	-0.00059	73.05029	0.00090
%RSD	21.14419	0.85930	4.33618	3.21417	0.72268	0.11938	210.79044	0.56154	46.25465
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.03472	0.04330	0.07260	115.26841	14.16514	0.05490	24.47689	1.62051	0.04101
#2	0.03491	0.04319	0.07318	116.32772	14.31379	0.05540	24.67669	1.63607	0.03977
Mean	0.03481	0.04325	0.07289	115.79806	14.23946	0.05515	24.57679	1.62829	0.04039
%RSD	0.39610	0.18011	0.56267	0.64686	0.73816	0.64902	0.57486	0.67563	2.16735
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.40022	0.05514	3.02865	0.24812	0.22072	17.97002	0.00936	0.32722	0.31188
#2	0.40487	0.05400	3.05348	0.24591	0.22622	18.07584	0.00566	0.33986	0.32514
Mean	0.40254	0.05457	3.04107	0.24701	0.22347	18.02293	0.00751	0.33354	0.31851
%RSD	0.81656	1.47685	0.57741	0.63417	1.74003	0.41515	34.82319	2.68045	2.94404
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	16.57717	0.00644	0.38530	0.21095	-0.01575	0.62120	1.19519	0.28720	0.04325
#2	16.77033	0.00241	0.38949	0.21234	-0.01692	0.60561	1.20732	0.28757	0.04331
Mean	16.67375	0.00443	0.38740	0.21165	-0.01634	0.61340	1.20126	0.28739	0.04328
%RSD	0.81919	64.30003	0.76394	0.46396	5.07933	1.79769	0.71374	0.08939	0.09298
	Pb calc	Se calc							
#1	0.22984	0.31699							
#2	0.23277	0.33004							
Mean	0.23131	0.32352							
%RSD	0.89574	2.85354							

Method : Paragon2 File : 130311A
SampleId1 : 1303060-4 SampleId2 :
Analysis commenced : 3/11/2013 16:22:44
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:08

[SAMPLE]

Position : TUBE51

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00147	38.67643	0.17989	0.01751	0.68495	0.00741	0.00499	282.57444	0.00069
#2	-0.00103	38.55027	0.17802	0.01659	0.68213	0.00737	0.00411	281.68694	0.00073
Mean	-0.00125	38.61335	0.17895	0.01705	0.68354	0.00739	0.00455	282.13069	0.00071
%RSD	25.03384	0.23104	0.73673	3.81540	0.29165	0.37410	13.65938	0.22244	4.17888
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo

	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03513	0.03191	0.05483	103.72895	14.81341	0.05675	26.50670	3.50970	0.48920
#2	0.03494	0.03170	0.05504	103.53243	14.77430	0.05658	26.42570	3.50208	0.49063
Mean	0.03503	0.03181	0.05494	103.63069	14.79386	0.05666	26.46620	3.50589	0.48992
%RSD	0.38383	0.46674	0.26330	0.13409	0.18693	0.20838	0.21641	0.15383	0.20706

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.51199	0.04915	2.66222	0.18582	0.16663	20.56100	0.00664	0.44183	0.42316
#2	0.51043	0.04872	2.67509	0.18187	0.16984	20.43607	0.00493	0.43727	0.43994
Mean	0.51121	0.04894	2.66865	0.18384	0.16824	20.49854	0.00579	0.43955	0.43155
%RSD	0.21656	0.63340	0.34106	1.51702	1.35102	0.43095	20.81156	0.73328	2.74986

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	15.74768	0.00499	0.55814	0.19957	-0.00738	1.46849	1.55335	0.24706	0.03390
#2	15.73047	0.00243	0.55621	0.19929	-0.01821	1.45178	1.54844	0.24597	0.03409
Mean	15.73908	0.00371	0.55717	0.19943	-0.01280	1.46014	1.55089	0.24652	0.03400
%RSD	0.07729	48.80609	0.24442	0.09848	59.84232	0.80916	0.22394	0.31259	0.39269

	Pb calc	Se calc
#1	0.17302	0.42938
#2	0.17385	0.43905
Mean	0.17343	0.43422
%RSD	0.33864	1.57572

Method : Paragon2 File : 130311A
SampleId1 : 1303060-5 SampleId2 :
Analysis commenced : 3/11/2013 16:24:29
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:08
[SAMPLE]

Position : TUBE52

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00150	52.64498	0.21508	0.02150	1.10728	0.01088	0.00973	111.50883	0.00084
#2	-0.00151	52.62932	0.22370	0.02119	1.11058	0.01090	0.00798	111.55662	0.00087
Mean	-0.00151	52.63715	0.21939	0.02134	1.10893	0.01089	0.00885	111.53272	0.00085
%RSD	0.24208	0.02104	2.77922	1.01597	0.21061	0.12992	13.99268	0.03030	2.33005

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.03933	0.03750	0.06991	129.04559	18.04306	0.06688	26.07452	1.90767	0.24622
#2	0.03939	0.03766	0.06915	129.24653	18.02016	0.06698	26.09604	1.91077	0.24257
Mean	0.03936	0.03758	0.06953	129.14606	18.03161	0.06693	26.08528	1.90922	0.24439
%RSD	0.09269	0.29429	0.77252	0.11001	0.08977	0.10750	0.05831	0.11501	1.05607

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
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#1	0.40993	0.05113	3.04365	0.28412	0.25733	32.82760	0.00835	0.84522	0.81408
#2	0.40985	0.05089	3.06731	0.28202	0.25961	32.94218	0.01097	0.84550	0.81973
Mean	0.40989	0.05101	3.05548	0.28307	0.25847	32.88489	0.00966	0.84536	0.81691
%RSD	0.01419	0.33422	0.54760	0.52493	0.62330	0.24636	19.13454	0.02359	0.48944

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	16.10241	0.00427	0.40127	0.19082	-0.01413	3.38772	2.75597	0.29919	0.05537
#2	16.12418	0.00610	0.40216	0.19069	-0.02370	3.39438	2.76088	0.30174	0.05550
Mean	16.11330	0.00518	0.40172	0.19076	-0.01892	3.39105	2.75843	0.30047	0.05543
%RSD	0.09553	24.95645	0.15599	0.04707	35.76660	0.13894	0.12582	0.59853	0.16585

	Pb	Se
	calc	calc
#1	0.26625	0.82445
#2	0.26707	0.82831
Mean	0.26666	0.82638
%RSD	0.21742	0.33075

Method : Paragon2 File : 130311A
SampleId1 : 1303060-6 **SampleId2 :**
Analysis commenced : 3/11/2013 16:26:15
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:08
[SAMPLE]

Position : TUBE53

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00062	74.54324	0.12978	0.04413	1.12222	0.00843	0.00967	138.35420	0.00123
#2	-0.00189	73.95054	0.11906	0.04020	1.11414	0.00834	0.00562	137.70945	0.00121
Mean	-0.00125	74.24689	0.12442	0.04216	1.11818	0.00839	0.00764	138.03183	0.00122
%RSD	71.14314	0.56447	6.09355	6.58253	0.51060	0.75027	37.42232	0.33029	1.63632

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05516	0.07091	0.12073	161.02741	26.10105	0.08996	33.43882	2.25385	0.07372
#2	0.05333	0.06963	0.11833	160.42846	25.94105	0.08952	33.27570	2.24565	0.07443
Mean	0.05425	0.07027	0.11953	160.72794	26.02105	0.08974	33.35726	2.24975	0.07407
%RSD	2.38920	1.28455	1.42160	0.26350	0.43480	0.34119	0.34577	0.25757	0.68420

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.92491	0.08821	3.68916	0.19300	0.15844	11.51917	0.01532	0.15435	0.14962
#2	0.91928	0.08580	3.70794	0.18580	0.16461	11.49284	0.00954	0.15004	0.16143
Mean	0.92209	0.08701	3.69855	0.18940	0.16152	11.50600	0.01243	0.15220	0.15553
%RSD	0.43217	1.95937	0.35896	2.68923	2.70202	0.16181	32.88693	2.00026	5.36897

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	15.89423	0.00899	0.63838	0.22387	-0.01273	1.07704	0.83179	0.39495	0.04610

#2	15.79824	0.00533	0.63467	0.22400	-0.02664	1.03160	0.82406	0.39331	0.04532
Mean	15.84623	0.00716	0.63653	0.22393	-0.01968	1.05432	0.82792	0.39413	0.04571
%RSD	0.42834	36.14759	0.41245	0.04009	49.98323	3.04712	0.65988	0.29343	1.21662
	Pb	Se							
	calc	calc							
#1	0.16995	0.15120							
#2	0.17167	0.15764							
Mean	0.17081	0.15442							
%RSD	0.71132	2.95032							

Method : Paragon2 File : 130311A
SampleId1 : 1303060-7 SampleId2 :
Analysis commenced : 3/11/2013 16:28:00
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:08
[SAMPLE]

Position : TUBE54

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00158	45.28723	0.15367	0.02597	0.78366	0.00788	0.00396	178.62323	0.00094
#2	-0.00070	45.02279	0.15239	0.02419	0.78076	0.00784	-0.01005	178.09683	0.00090
Mean	-0.00114	45.15501	0.15303	0.02508	0.78221	0.00786	-0.00304	178.36003	0.00092
%RSD	54.15458	0.41410	0.59234	5.01377	0.26162	0.34788	325.41925	0.20869	2.66928

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03680	0.04279	0.08955	116.79062	18.07053	0.05623	24.52368	1.99267	0.13432
#2	0.03675	0.04332	0.08928	116.51845	17.97559	0.05603	24.44370	1.98690	0.13269
Mean	0.03677	0.04305	0.08942	116.65453	18.02306	0.05613	24.48369	1.98979	0.13350
%RSD	0.09669	0.87057	0.21512	0.16497	0.37250	0.26296	0.23099	0.20505	0.86289

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.46537	0.06040	3.59037	0.21836	0.19574	19.50890	0.00488	0.48902	0.46336
#2	0.46331	0.05963	3.57301	0.21360	0.20184	19.39541	0.00895	0.48406	0.47236
Mean	0.46434	0.06001	3.58169	0.21598	0.19879	19.45216	0.00691	0.48654	0.46786
%RSD	0.31350	0.90382	0.34276	1.55831	2.17044	0.41254	41.64147	0.72178	1.36014

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	16.96375	0.00091	0.40435	0.24782	-0.01702	2.16473	1.55807	0.28648	0.03433
#2	16.87555	0.00237	0.40222	0.24760	-0.01287	2.15406	1.55504	0.28702	0.03400
Mean	16.91965	0.00164	0.40328	0.24771	-0.01494	2.15939	1.55655	0.28675	0.03417
%RSD	0.36862	63.04865	0.37359	0.06342	19.67511	0.34933	0.13743	0.13438	0.69163

	Pb	Se							
	calc	calc							
#1	0.20327	0.47190							
#2	0.20576	0.47625							

Mean 0.20451 0.47408ser: STEVE WORKMAN
%RSD 0.85915 0.64864

Method : Paragon2 File : 130311A
SampleId1 : 1303060-8 SampleId2 :
Analysis commenced : 3/11/2013 16:29:46
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:08
[SAMPLE]

Position : TUBE55

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00202	48.17202	0.17394	0.02401	0.77560	0.00896	0.00594	153.56450	0.00103
#2	-0.00169	48.53316	0.17534	0.02370	0.77644	0.00899	0.00787	153.71008	0.00065
Mean	-0.00185	48.35259	0.17464	0.02386	0.77602	0.00897	0.00691	153.63729	0.00084
%RSD	12.61420	0.52813	0.56619	0.90889	0.07677	0.19389	19.79286	0.06700	32.63865
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.03852	0.04268	0.07925	116.23597	18.26576	0.05789	24.80442	2.03542	0.12487
#2	0.03865	0.04302	0.07999	116.41126	18.41306	0.05822	24.86766	2.04068	0.12728
Mean	0.03859	0.04285	0.07962	116.32361	18.33941	0.05805	24.83604	2.03805	0.12607
%RSD	0.25083	0.55828	0.66424	0.10656	0.56794	0.40995	0.18004	0.18266	1.35231
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.44495	0.05604	3.52492	0.23786	0.21958	19.41433	0.00694	0.47686	0.45367
#2	0.44857	0.05733	3.53290	0.23834	0.22632	19.47486	0.01011	0.47659	0.46573
Mean	0.44676	0.05668	3.52891	0.23810	0.22295	19.44459	0.00852	0.47672	0.45970
%RSD	0.57333	1.61313	0.15982	0.14291	2.13755	0.22011	26.32892	0.04009	1.85393
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	18.51024	0.00345	0.36208	0.26937	-0.02593	2.98474	1.85338	0.36424	0.03788
#2	18.62685	0.00271	0.36252	0.27146	-0.02095	2.99007	1.85336	0.36242	0.03835
Mean	18.56854	0.00308	0.36230	0.27041	-0.02344	2.98740	1.85337	0.36333	0.03811
%RSD	0.44406	16.86246	0.08645	0.54772	15.01411	0.12610	0.00099	0.35363	0.85883
	Pb calc	Se calc							
#1	0.22567	0.46139							
#2	0.23032	0.46934							
Mean	0.22799	0.46537							
%RSD	1.44390	1.20783							

Method : Paragon2 File : 130311A
SampleId1 : 1303060-9 SampleId2 :
Analysis commenced : 3/11/2013 16:31:32
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:09
[SAMPLE]

Position : TUBE56

Final concentrations6:29 User: STEVE WORKMAN

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00141	38.06696	0.04377	0.00432	2.05871	0.00500	0.00541	52.58455	0.00099
#2	-0.00068	38.06734	0.03945	0.00494	2.06070	0.00495	0.00558	52.63030	0.00098
Mean	-0.00105	38.06715	0.04161	0.00463	2.05971	0.00497	0.00550	52.60742	0.00099
%RSD	49.33171	0.00071	7.32827	9.36644	0.06839	0.69633	2.20851	0.06149	1.00422
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.02674	0.03195	0.04553	107.86776	7.64890	0.04854	17.67063	1.65410	0.02622
#2	0.02637	0.03260	0.04507	108.01813	7.63987	0.04857	17.70467	1.65675	0.02713
Mean	0.02656	0.03228	0.04530	107.94294	7.64439	0.04856	17.68765	1.65543	0.02667
%RSD	0.99208	1.43066	0.71345	0.09850	0.08352	0.03800	0.13609	0.11348	2.41808
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.25873	0.02800	2.22999	0.12072	0.10744	7.35770	0.00391	0.52777	0.51677
#2	0.25881	0.02875	2.20475	0.12019	0.10698	7.30895	0.00958	0.54552	0.52276
Mean	0.25877	0.02838	2.21737	0.12045	0.10721	7.33332	0.00674	0.53665	0.51977
%RSD	0.02244	1.85689	0.80502	0.30885	0.29745	0.47008	59.41407	2.33881	0.81550
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	14.40312	0.00466	0.32252	0.17131	-0.01468	1.35723	0.86414	0.27794	0.02532
#2	14.41001	0.00246	0.32284	0.17216	-0.02392	1.34314	0.86423	0.27867	0.02552
Mean	14.40656	0.00356	0.32268	0.17174	-0.01930	1.35018	0.86418	0.27830	0.02542
%RSD	0.03382	43.63030	0.06813	0.34964	33.85937	0.73802	0.00719	0.18461	0.57005
	Pb calc	Se calc							
#1	0.11186	0.52043							
#2	0.11138	0.53034							
Mean	0.11162	0.52539							
%RSD	0.30154	1.33363							

Method : Paragon2 File : 130311A
SampleId1 : 1303060-10 SampleId2 :
Analysis commenced : 3/11/2013 16:33:17
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:09
[SAMPLE]
Position : TUBE57

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00069	49.22563	0.14085	0.02628	0.89678	0.00796	0.00927	159.85904	0.00190
#2	-0.00034	49.14265	0.13992	0.02340	0.89513	0.00793	0.00857	159.93373	0.00134
Mean	-0.00051	49.18414	0.14038	0.02484	0.89596	0.00795	0.00892	159.89638	0.00162
%RSD	47.67246	0.11929	0.46960	8.20602	0.13019	0.27024	5.56625	0.03303	24.47210

ted: 3/12/2013 13:06:29 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03275	0.04624	0.11248	123.35125	20.12708	0.06581	26.96237	2.11771	0.12774
#2	0.03270	0.04635	0.11250	123.50154	20.10799	0.06589	26.96110	2.11993	0.12741
Mean	0.03273	0.04630	0.11249	123.42639	20.11753	0.06585	26.96173	2.11882	0.12757
%RSD	0.10899	0.16669	0.00780	0.08610	0.06710	0.07564	0.00332	0.07413	0.18060

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.44808	0.04703	3.14158	0.21954	0.19184	22.29225	0.00980	0.37069	0.34259
#2	0.44767	0.04694	3.15025	0.21981	0.20073	22.30362	0.00623	0.35499	0.35914
Mean	0.44787	0.04698	3.14592	0.21967	0.19629	22.29793	0.00802	0.36284	0.35086
%RSD	0.06499	0.13194	0.19489	0.08977	3.20143	0.03606	31.43833	3.05951	3.33620

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	19.87871	0.00381	0.60008	0.27104	-0.01603	1.33300	1.65071	0.42875	0.04130
#2	19.88553	0.00820	0.59888	0.27172	-0.02323	1.32024	1.64780	0.43311	0.04094
Mean	19.88212	0.00600	0.59948	0.27138	-0.01963	1.32662	1.64926	0.43093	0.04112
%RSD	0.02426	51.69364	0.14148	0.17779	25.94374	0.67973	0.12489	0.71576	0.62282

	Pb	Se
	calc	calc
#1	0.20106	0.35194
#2	0.20708	0.35776
Mean	0.20407	0.35485
%RSD	2.08604	1.15849

Method : Paragon2 File : 130311A
SampleId1 : 1303060-11 SampleId2 :
Analysis commenced : 3/11/2013 16:35:02
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:09

[SAMPLE]

Position : TUBE58

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00221	83.19023	0.11847	0.05357	1.04659	0.00836	0.00765	115.32455	0.00093
#2	-0.00097	83.20031	0.12267	0.05664	1.04773	0.00841	0.01046	115.65119	0.00150
Mean	-0.00159	83.19527	0.12057	0.05510	1.04716	0.00838	0.00906	115.48787	0.00122
%RSD	55.53305	0.00857	2.46050	3.93491	0.07680	0.34017	21.90139	0.19999	32.94056

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05343	0.07484	0.11387	170.80119	26.72044	0.09465	35.35995	2.07462	0.14507
#2	0.05362	0.07619	0.11463	171.42915	26.73629	0.09484	35.46763	2.08160	0.14383
Mean	0.05353	0.07552	0.11425	171.11517	26.72836	0.09474	35.41379	2.07811	0.14445
%RSD	0.24572	1.26381	0.46817	0.25949	0.04192	0.14016	0.21500	0.23748	0.60611

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.19579	0.09170	3.36286	0.18508	0.16241	27.76132	0.01038	0.23864	0.23640
#2	3.20216	0.09262	3.38842	0.18573	0.16389	27.82982	0.01207	0.24813	0.25166
Mean	3.19897	0.09216	3.37564	0.18541	0.16315	27.79557	0.01122	0.24338	0.24403
%RSD	0.14075	0.70631	0.53539	0.24874	0.64353	0.17425	10.62735	2.75630	4.42159

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	18.53367	0.00897	0.71809	0.24082	-0.01461	1.35991	0.65928	0.45183	0.04625
#2	18.57901	0.00384	0.71946	0.24195	-0.01691	1.35645	0.65892	0.45329	0.04690
Mean	18.55634	0.00640	0.71878	0.24139	-0.01576	1.35818	0.65910	0.45256	0.04658
%RSD	0.17278	56.56061	0.13486	0.33239	10.35449	0.18026	0.03816	0.22720	0.98902

	Pb	Se
	calc	calc
#1	0.16996	0.23714
#2	0.17116	0.25048
Mean	0.17056	0.24381
%RSD	0.50062	3.86803

Method : Paragon2 File : 130311A
SampleId1 : 1303060-12 SampleId2 :
Analysis commenced : 3/11/2013 16:36:47
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:09
[SAMPLE]

Position : TUBE59

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00153	30.97926	0.03456	0.01334	0.76303	0.00374	-0.00080	181.03599	-0.00012
#2	-0.00135	31.03383	0.03223	0.01150	0.76340	0.00372	0.00306	181.29926	0.00006
Mean	-0.00144	31.00655	0.03339	0.01242	0.76321	0.00373	0.00113	181.16763	-0.00003
%RSD	8.73418	0.12444	4.93599	10.47596	0.03394	0.21655	241.79364	0.10276	404.53122

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03244	0.03167	0.04226	88.98420	8.40824	0.04584	37.41428	1.18811	0.00146
#2	0.03254	0.03240	0.04290	89.09421	8.41942	0.04589	37.49057	1.18962	0.00244
Mean	0.03249	0.03203	0.04258	89.03921	8.41383	0.04586	37.45243	1.18887	0.00195
%RSD	0.19970	1.61559	1.06531	0.08736	0.09395	0.08046	0.14405	0.08999	35.46742

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.43429	0.05411	2.39973	0.05733	0.05564	2.09130	0.00905	-0.00110	0.00240
#2	0.43495	0.05426	2.40581	0.06370	0.05572	2.07262	0.00904	0.00263	0.00485
Mean	0.43462	0.05418	2.40277	0.06051	0.05568	2.08196	0.00905	0.00076	0.00362
%RSD	0.10714	0.20021	0.17894	7.44061	0.10283	0.63440	0.04499	344.83044	47.77628

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	15.38804	0.00058	0.49647	0.21774	-0.01040	0.07147	0.08684	0.20456	0.01493
#2	15.41202	-0.00235	0.49618	0.21876	-0.01117	0.08953	0.08755	0.20711	0.01535
Mean	15.40003	-0.00089	0.49633	0.21825	-0.01078	0.08050	0.08719	0.20584	0.01514
%RSD	0.11011	233.90405	0.04033	0.33166	5.07275	15.86505	0.57145	0.87339	1.95298

	Pb calc	Se calc
#1	0.05620	0.00123
#2	0.05838	0.00411
Mean	0.05729	0.00267
%RSD	2.68392	76.07263

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 16:39:02
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:09

[CV]

Position : STD1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.20235	49.62597	0.52801	1.00956	1.01662	0.50042	0.54734	50.18389	0.53319
#2	0.20156	49.35913	0.52568	1.00380	1.01222	0.49855	0.54960	50.01885	0.53164
Mean	0.20195	49.49255	0.52685	1.00668	1.01442	0.49949	0.54847	50.10137	0.53242
%RSD	0.27679	0.38124	0.31267	0.40478	0.30682	0.26413	0.29194	0.23293	0.20552

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.50023	1.00251	1.03413	19.54480	49.82473	0.52338	49.74578	0.98853	1.01072
#2	0.49836	0.99991	1.02823	19.48418	49.56699	0.52039	49.53679	0.98589	1.01229
Mean	0.49929	1.00121	1.03118	19.51449	49.69586	0.52188	49.64128	0.98721	1.01151
%RSD	0.26497	0.18408	0.40470	0.21966	0.36673	0.40566	0.29770	0.18938	0.10951

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	49.17569	1.05276	4.71594	1.01222	0.95579	4.92973	0.50433	1.01477	0.95581
#2	48.99881	1.04415	4.70323	1.01187	0.96932	4.84737	0.50437	1.01794	0.97650
Mean	49.08725	1.04846	4.70958	1.01204	0.96256	4.88855	0.50435	1.01635	0.96615
%RSD	0.25479	0.58094	0.19080	0.02430	0.99419	1.19124	0.00684	0.21996	1.51481

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.84465	1.04651	0.50305	0.48049	0.52096	4.91100	0.49848	0.98348	1.00879
#2	4.81776	1.04798	0.50101	0.47863	0.51367	4.89895	0.49710	0.97473	1.00416
Mean	4.83121	1.04724	0.50203	0.47956	0.51731	4.90497	0.49779	0.97910	1.00647
%RSD	0.39356	0.09901	0.28841	0.27477	0.99631	0.17372	0.19555	0.63133	0.32554

	Pb calc	Se calc
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#1	0.97458	0.97544	ser: STEVE WORKMAN
#2	0.98349	0.99030	
Mean	0.97904	0.98287	
%RSD	0.64360	1.06894	

Method : Paragon2 File : 130311A
SampleId1 : CCB SampleId2 :
Analysis commenced : 3/11/2013 16:40:53
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:10
[CB]

Position : STD2

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00026	0.10923	0.00064	-0.00672	0.00030	0.00052	0.00425	-0.02524	0.00019
#2	0.00074	0.11089	-0.00169	-0.00623	0.00033	0.00053	0.00250	-0.02290	0.00030
Mean	0.00050	0.11006	-0.00052	-0.00647	0.00031	0.00052	0.00338	-0.02407	0.00025
%RSD	67.17867	1.06301	314.61870	5.36163	8.22073	1.80715	36.54444	6.88228	33.92134

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	-0.00006	0.00029	-0.00220	0.02628	-0.12377	-0.00255	0.01361	0.00027	0.00139
#2	0.00036	0.00079	-0.00061	0.02667	-0.11602	-0.00251	0.02393	0.00033	0.00172
Mean	0.00015	0.00054	-0.00140	0.02647	-0.11990	-0.00253	0.01877	0.00030	0.00156
%RSD	192.85942	65.41479	80.33543	1.04030	4.57490	1.24056	38.88764	14.71284	14.78980

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.03796	-0.00025	-0.00568	0.00058	0.00109	-0.01408	0.00703	0.00281	0.00199
#2	0.03821	0.00102	-0.01497	0.00436	-0.00246	-0.02154	0.00715	0.00282	0.00253
Mean	0.03809	0.00039	-0.01033	0.00247	-0.00068	-0.01781	0.00709	0.00281	0.00226
%RSD	0.45589	231.32582	63.61889	108.44206	368.30617	29.62403	1.25722	0.14359	16.90524

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	0.00363	0.00047	-0.00116	-0.00268	-0.00100	-0.00820	0.00074	0.00071	0.00087
#2	0.00515	0.00010	-0.00110	-0.00273	-0.00029	-0.00217	0.00124	-0.00038	0.00117
Mean	0.00439	0.00029	-0.00113	-0.00271	-0.00064	-0.00519	0.00099	0.00016	0.00102
%RSD	24.42073	90.27948	4.12121	1.24375	78.80672	82.15376	36.02808	478.04764	21.41482

	Pb calc	Se calc
#1	0.00092	0.00226
#2	-0.00019	0.00263
Mean	0.00037	0.00244
%RSD	212.95635	10.48199

Method : Paragon2 File : 130311A
SampleId1 : ZZZ SampleId2 :
Analysis commenced : 3/11/2013 16:42:43

Printed : 3/12/2013 13:06:10
[SAMPLE]

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE61

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00069	12.65290	0.01300	-0.00389	0.19694	0.00148	0.00322	137.35873	-0.00030
#2	-0.00102	12.58687	0.01638	-0.00506	0.19515	0.00145	0.00200	136.63314	-0.00017
Mean	-0.00086	12.61988	0.01469	-0.00448	0.19605	0.00147	0.00261	136.99594	-0.00024
%RSD	27.52090	0.37000	16.27389	18.40256	0.64537	1.32164	33.15266	0.37451	40.82504
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00609	0.00824	0.00573	24.22675	3.09607	0.01139	5.57925	1.70604	0.00055
#2	0.00633	0.00856	0.00705	24.11257	3.07954	0.01133	5.55323	1.69921	0.00218
Mean	0.00621	0.00840	0.00639	24.16966	3.08780	0.01136	5.56624	1.70262	0.00136
%RSD	2.64344	2.73852	14.64223	0.33407	0.37850	0.35748	0.33057	0.28382	84.56099
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08815	0.00953	0.56369	0.02260	0.02336	1.85223	0.00360	0.03321	0.03165
#2	0.08738	0.01025	0.58649	0.02237	0.02251	1.82982	0.00361	0.03677	0.03461
Mean	0.08777	0.00989	0.57509	0.02248	0.02294	1.84102	0.00360	0.03499	0.03313
%RSD	0.62692	5.17132	2.80375	0.70862	2.63159	0.86076	0.08114	7.21085	6.30729
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	5.31180	0.00222	0.40038	0.06889	-0.00935	0.16354	0.14256	0.04843	0.00493
#2	5.28057	0.00624	0.39727	0.06836	-0.00392	0.15820	0.14162	0.04862	0.00515
Mean	5.29619	0.00423	0.39882	0.06862	-0.00664	0.16087	0.14209	0.04852	0.00504
%RSD	0.41690	67.31709	0.55158	0.54807	57.85706	2.34570	0.47012	0.26447	3.11796
	Pb	Se							
	calc	calc							
#1	0.02311	0.03217							
#2	0.02246	0.03533							
Mean	0.02278	0.03375							
%RSD	1.99971	6.61923							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:10

SampleId1 : ZZZ

SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 16:45:58

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE62

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00024	13.94616	0.01649	-0.00383	0.21637	0.00151	0.00307	43.26577	-0.00027
#2	-0.00044	14.01865	0.01941	-0.00426	0.21809	0.00153	0.00325	43.45556	-0.00042

Mean	-0.00010	13.98241	0.01795	-0.00405	0.21723	0.00152	0.00316	43.36067	-0.00035
%RSD	484.18454	0.36659	11.47851	7.49890	0.55874	0.68529	3.96797	0.30950	30.78377
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00831	0.00928	0.00871	28.73473	3.03798	0.01073	5.46137	0.46864	0.00133
#2	0.00817	0.00926	0.00899	28.91957	3.03515	0.01076	5.49178	0.47153	0.00107
Mean	0.00824	0.00927	0.00885	28.82715	3.03657	0.01075	5.47657	0.47008	0.00120
%RSD	1.19170	0.16357	2.24233	0.45339	0.06598	0.13741	0.39264	0.43396	15.36752
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.13219	0.01314	0.59394	0.03260	0.02922	2.71159	0.00662	0.03461	0.03822
#2	0.13269	0.01406	0.60301	0.03281	0.02928	2.78634	0.00768	0.04946	0.03627
Mean	0.13244	0.01360	0.59848	0.03271	0.02925	2.74896	0.00715	0.04204	0.03724
%RSD	0.26255	4.78445	1.07225	0.45100	0.14716	1.92283	10.42076	24.97045	3.70820
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.22752	-0.00072	0.07548	0.07209	-0.08963	0.20022	0.17699	0.05007	0.00666
#2	4.26026	0.00185	0.07596	0.07264	-0.04955	0.20220	0.17732	0.05116	0.00662
Mean	4.24389	0.00056	0.07572	0.07237	-0.06959	0.20121	0.17715	0.05061	0.00664
%RSD	0.54542	320.41523	0.44769	0.53520	40.72043	0.69425	0.13304	1.52142	0.39428
	Pb	Se							
	calc	calc							
#1	0.03035	0.03702							
#2	0.03046	0.04066							
Mean	0.03040	0.03884							
%RSD	0.25600	6.62822							

Method : Paragon2
SampleId1 : ZZZ
Analysis commenced : 3/11/2013 16:49:39
Dilution ratio : 1.00000 to 1.00000

File : 130311A

SampleId2 :

Tray :

Printed : 3/12/2013 13:06:10

[SAMPLE]

Position : TUBE62

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00034	13.15735	0.01649	-0.00439	0.20457	0.00169	0.00412	96.87858	0.00031
#2	-0.00104	13.30625	0.01626	-0.00463	0.20680	0.00171	0.00464	97.73120	0.00002
Mean	-0.00069	13.23180	0.01638	-0.00451	0.20569	0.00170	0.00438	97.30489	0.00017
%RSD	71.73576	0.79572	1.00651	3.84787	0.76581	0.75781	8.34863	0.61959	123.24268
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00722	0.00972	0.00823	25.97205	3.06490	0.01129	5.53943	1.18748	0.00276
#2	0.00708	0.00901	0.00769	26.19751	3.08922	0.01136	5.59492	1.19908	-0.00004
Mean	0.00715	0.00936	0.00796	26.08478	3.07706	0.01132	5.56718	1.19328	0.00136

%RSD	1.35972	5.32317	4.77455	0.61117	0.55887	0.48893	0.70483	0.68742	145.44478
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.12261	0.01273	0.60627	0.03156	0.02467	2.22206	0.00768	0.03531	0.03373
#2	0.12392	0.01231	0.59161	0.03119	0.02815	2.24074	0.00636	0.03954	0.03683
Mean	0.12326	0.01252	0.59894	0.03138	0.02641	2.23140	0.00702	0.03742	0.03528
%RSD	0.75218	2.35195	1.73075	0.85520	9.30989	0.59198	13.33517	7.99915	6.21183
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.84506	0.00624	0.26307	0.07007	-0.09427	0.20675	0.15706	0.04989	0.00616
#2	4.89653	-0.00071	0.26591	0.07034	-0.05263	0.17858	0.15749	0.04898	0.00625
Mean	4.87079	0.00276	0.26449	0.07021	-0.07345	0.19267	0.15727	0.04943	0.00620
%RSD	0.74720	177.92508	0.76025	0.27185	40.08368	10.33731	0.19389	1.29810	0.94873
	Pb	Se							
	calc	calc							
#1	0.02697	0.03425							
#2	0.02916	0.03773							
Mean	0.02806	0.03599							
%RSD	5.52552	6.83068							

Method : Paragon2 File : 130311A
SampleId1 : 1303057-1 5X SampleId2 :
Analysis commenced : 3/11/2013 17:08:28
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:10

[SAMPLE]

Position : TUBE61

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00052	12.91752	0.00815	-0.00524	0.20030	0.00159	0.00497	140.28297	-0.00024
#2	-0.00029	12.86830	0.01176	-0.00518	0.20012	0.00159	-0.00046	140.11718	-0.00054
Mean	-0.00041	12.89291	0.00996	-0.00521	0.20021	0.00159	0.00226	140.20008	-0.00039
%RSD	40.41272	0.26991	25.66004	0.83183	0.06449	0.39476	169.94194	0.08362	54.10309
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00680	0.00818	0.00634	24.67968	3.11378	0.01153	5.58694	1.64615	-0.00102
#2	0.00698	0.00853	0.00634	24.67014	3.10929	0.01152	5.58325	1.64615	-0.00096
Mean	0.00689	0.00835	0.00634	24.67491	3.11153	0.01153	5.58509	1.64615	-0.00099
%RSD	1.84602	2.93892	0.00704	0.02733	0.10196	0.08006	0.04672	0.00000	4.47711
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.06539	0.00993	0.57912	0.02211	0.02072	1.87090	0.00036	0.03402	0.03410
#2	0.06588	0.01017	0.56723	0.02394	0.01943	1.89705	0.00128	0.03334	0.03154
Mean	0.06563	0.01005	0.57317	0.02302	0.02007	1.88398	0.00082	0.03368	0.03282
%RSD	0.52930	1.69606	1.46706	5.59596	4.51578	0.98136	79.02138	1.44142	5.50683

ted: 3/12/2013 13:06:29 User: STEVE WORKMAN

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	5.39942	-0.00181	0.40343	0.06752	-0.00354	0.15498	0.14062	0.04606	0.00547
#2	5.39125	0.00222	0.40317	0.06783	-0.01189	0.15563	0.13978	0.04674	0.00547
Mean	5.39534	0.00020	0.40330	0.06767	-0.00772	0.15531	0.14020	0.04640	0.00547
%RSD	0.10703	1390.47104	0.04628	0.32722	76.53707	0.29520	0.42012	1.04541	0.01949

	Pb	Se
	calc	calc
#1	0.02118	0.03407
#2	0.02093	0.03214
Mean	0.02106	0.03311
%RSD	0.83398	4.12971

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:10

SampleId1 : 1303057-1D 5X SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 17:10:10

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : TUBE62

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00013	13.83327	0.01701	-0.00414	0.21557	0.00151	0.00902	42.87003	-0.00020
#2	-0.00084	13.88619	0.01514	-0.00475	0.21652	0.00149	-0.00726	42.95887	-0.00068
Mean	-0.00036	13.85973	0.01608	-0.00445	0.21604	0.00150	0.00088	42.91445	-0.00044
%RSD	192.97423	0.26998	8.20270	9.75235	0.31079	0.87639	1310.31140	0.14638	76.92110

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00795	0.00886	0.00732	28.47684	2.98651	0.01054	5.30556	0.43939	0.00080
#2	0.00786	0.00932	0.00742	28.57044	2.99053	0.01056	5.31970	0.44064	0.00092
Mean	0.00790	0.00909	0.00737	28.52364	2.98852	0.01055	5.31263	0.44001	0.00086
%RSD	0.79857	3.63655	0.95822	0.23204	0.09496	0.12248	0.18827	0.20084	10.31807

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.12777	0.01285	0.57386	0.03268	0.02388	2.68169	-0.00082	0.03586	0.04095
#2	0.12793	0.01175	0.57866	0.03453	0.02577	2.69290	-0.00241	0.03256	0.04062
Mean	0.12785	0.01230	0.57626	0.03360	0.02482	2.68729	-0.00162	0.03421	0.04078
%RSD	0.09065	6.30106	0.58930	3.88721	5.39582	0.29503	69.39893	6.82856	0.58526

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.24741	0.00258	0.07251	0.06970	-0.00576	0.21314	0.16974	0.04606	0.00673
#2	4.26589	0.00002	0.07287	0.06978	-0.00679	0.20731	0.17021	0.04623	0.00691
Mean	4.25665	0.00130	0.07269	0.06974	-0.00627	0.21022	0.16998	0.04614	0.00682
%RSD	0.30693	139.32667	0.34747	0.08518	11.61495	1.96327	0.19798	0.26281	1.81339

	Pb	Seser: STEVE WORKMAN
	calc	calc
#1	0.02681	0.03926
#2	0.02869	0.03793
Mean	0.02775	0.03860
%RSD	4.78743	2.42814

Method : Paragon2 File : 130311A
SampleId1 : 1303057-1L 25X SampleId2 :
Analysis commenced : 3/11/2013 17:11:56
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:11
[SAMPLE]
Position : TUBE63

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00104	2.69114	-0.00514	-0.00972	0.03962	0.00039	-0.00238	27.43658	-0.00062
#2	-0.00021	2.67486	-0.00001	-0.00905	0.03948	0.00038	0.00130	27.36129	-0.00104
Mean	-0.00063	2.68300	-0.00257	-0.00938	0.03955	0.00038	-0.00054	27.39893	-0.00083
%RSD	93.79913	0.42908	140.94307	5.08357	0.26093	0.45995	482.58332	0.19430	36.40004

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00064	0.00070	-0.00283	4.93458	0.42131	-0.00046	1.11560	0.33873	-0.00128
#2	0.00032	0.00044	-0.00321	4.92313	0.42672	-0.00044	1.11007	0.33778	-0.00153
Mean	0.00048	0.00057	-0.00302	4.92885	0.42401	-0.00045	1.11284	0.33826	-0.00140
%RSD	46.87599	31.82424	8.97720	0.16426	0.90230	2.86128	0.35102	0.19889	12.68704

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02953	-0.00085	0.10285	0.00281	0.00569	0.38883	-0.00229	0.00639	0.00519
#2	0.02957	-0.00013	0.10856	0.00441	0.00310	0.36271	-0.00031	0.00227	0.01188
Mean	0.02955	-0.00049	0.10570	0.00361	0.00439	0.37577	-0.00130	0.00433	0.00853
%RSD	0.09791	104.18030	3.81939	31.49339	41.70082	4.91474	107.47915	67.21246	55.46595

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.09748	0.00082	0.07821	0.01155	-0.01193	-0.00311	0.02797	0.00816	0.00009
#2	1.08999	-0.00503	0.07772	0.01169	-0.00168	0.00401	0.02805	0.00799	0.00038
Mean	1.09373	-0.00211	0.07796	0.01162	-0.00681	0.00045	0.02801	0.00807	0.00024
%RSD	0.48400	196.34128	0.44335	0.88324	106.53650	1112.19902	0.21213	1.50190	89.64104

	Pb	Se
	calc	calc
#1	0.00473	0.00559
#2	0.00354	0.00868
Mean	0.00413	0.00713
%RSD	20.41016	30.66479

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:11

SampleId1 : 1303057-1MS 5X SampleId2 :
 Analysis commenced : 3/11/2013 17:13:41
 Dilution ratio : 1.00000 to 1.00000 Tray :

[SAMPLE]
 Position : TUBE64

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.01891	18.40715	0.22457	0.16966	0.45508	0.01150	0.00177	25.20044	0.01059
#2	0.01850	18.50853	0.21932	0.16972	0.45607	0.01154	0.00772	25.27198	0.01039
Mean	0.01870	18.45784	0.22194	0.16969	0.45558	0.01152	0.00474	25.23621	0.01049
%RSD	1.55266	0.38840	1.67061	0.02555	0.15325	0.24991	88.73809	0.20047	1.32405
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.10698	0.05068	0.06253	23.90118	10.63658	0.10597	13.12700	0.54972	0.18631
#2	0.10747	0.05096	0.06301	23.97361	10.69504	0.10649	13.15601	0.55263	0.18531
Mean	0.10723	0.05082	0.06277	23.93739	10.66581	0.10623	13.14151	0.55118	0.18581
%RSD	0.32821	0.38838	0.54446	0.21398	0.38754	0.34720	0.15609	0.37445	0.38285
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	7.05633	0.11923	0.42913	0.12494	0.11637	2.21459	0.06711	0.43427	0.40070
#2	7.08979	0.12022	0.42456	0.12675	0.11720	2.16602	0.06670	0.43591	0.41477
Mean	7.07306	0.11973	0.42684	0.12585	0.11678	2.19030	0.06691	0.43509	0.40773
%RSD	0.33452	0.58250	0.75737	1.01515	0.50161	1.56798	0.42882	0.26645	2.43935
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	3.24097	0.10200	0.15051	0.14287	0.39780	0.17388	0.29220	0.14125	0.00810
#2	3.25653	0.10676	0.15089	0.14329	0.39270	0.16093	0.29290	0.13971	0.00831
Mean	3.24875	0.10438	0.15070	0.14308	0.39525	0.16741	0.29255	0.14048	0.00821
%RSD	0.33867	3.22156	0.17655	0.20756	0.91153	5.46837	0.16946	0.77719	1.85366
	Pb calc	Se calc							
#1	0.11922	0.41188							
#2	0.12038	0.42181							
Mean	0.11980	0.41684							
%RSD	0.68125	1.68410							

Method : Paragon2 File : 130311A
 SampleId1 : 1303057-1MSD 5X SampleId2 :
 Analysis commenced : 3/11/2013 17:15:23
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:11
 [SAMPLE]
 Position : TUBE65

Final concentrations

Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
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#1	0.01855	19.69850	0.22585	0.17021	0.41343	0.01165	0.00649	21.81996	0.00999
#2	0.01873	19.76281	0.22993	0.16991	0.41464	0.01170	-0.00296	21.89716	0.01048
Mean	0.01864	19.73066	0.22789	0.17006	0.41404	0.01168	0.00177	21.85856	0.01023
%RSD	0.68547	0.23048	1.26547	0.12749	0.20605	0.30202	377.93294	0.24972	3.41976

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.10727	0.05138	0.06160	28.85318	10.75636	0.10799	13.80233	0.54561	0.18606
#2	0.10795	0.05109	0.06235	28.98131	10.78858	0.10844	13.84432	0.54829	0.18757
Mean	0.10761	0.05123	0.06198	28.91724	10.77247	0.10821	13.82333	0.54695	0.18682
%RSD	0.44570	0.40702	0.85073	0.31332	0.21146	0.28971	0.21476	0.34653	0.57118

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	7.06767	0.12219	0.49108	0.12755	0.11697	2.55088	0.06973	0.40852	0.38354
#2	7.08786	0.12250	0.49520	0.13022	0.11682	2.55462	0.06698	0.42147	0.39964
Mean	7.07777	0.12234	0.49314	0.12888	0.11689	2.55275	0.06836	0.41499	0.39159
%RSD	0.20166	0.17734	0.59011	1.46008	0.08968	0.10352	2.85278	2.20571	2.90808

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.17011	0.10456	0.15320	0.14543	0.40634	0.15940	0.28010	0.14777	0.00815
#2	3.18209	0.10895	0.15391	0.14609	0.40533	0.16714	0.28115	0.14966	0.00818
Mean	3.17610	0.10676	0.15355	0.14576	0.40584	0.16327	0.28063	0.14872	0.00817
%RSD	0.26670	2.90739	0.32488	0.31859	0.17544	3.35066	0.26617	0.89733	0.23807

	Pb	Se
	calc	calc
#1	0.12049	0.39186
#2	0.12128	0.40691
Mean	0.12089	0.39938
%RSD	0.46054	2.66505

Method : Paragon2 File : 130311A
SampleId1 : ZZZ SampleId2 :
Analysis commenced : 3/11/2013 17:17:08
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:11
[CV]

Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19517	49.25424	0.53272	0.99871	1.01064	0.47293	0.54142	49.85201	0.53323
#2	0.19400	49.05296	0.52060	0.99644	1.00404	0.47067	0.54667	49.61839	0.52824
Mean	0.19458	49.15360	0.52666	0.99757	1.00734	0.47180	0.54404	49.73520	0.53074
%RSD	0.42441	0.28956	1.62648	0.16078	0.46345	0.33886	0.68234	0.33214	0.66442

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48140	0.95470	1.02667	19.36058	49.65256	0.52084	48.32716	0.93021	0.96350

#2	0.47882	0.94997	1.02079	19.26315	49.45132	0.51840	48.07887	0.92597	0.96243
Mean	0.48011	0.95233	1.02373	19.31186	49.55194	0.51962	48.20301	0.92809	0.96296
%RSD	0.38056	0.35098	0.40603	0.35676	0.28717	0.33174	0.36423	0.32320	0.07861

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.94733	1.04392	4.59430	0.96364	0.88531	4.87732	0.49799	1.01168	0.90717
#2	48.75601	1.03166	4.58157	0.95603	0.91558	4.87357	0.49581	0.99854	0.94472
Mean	48.85167	1.03779	4.58793	0.95983	0.90045	4.87545	0.49690	1.00511	0.92594
%RSD	0.27693	0.83481	0.19608	0.56036	2.37690	0.05429	0.31084	0.92440	2.86749

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.68122	1.04251	0.49841	0.45857	0.52981	4.70527	0.47757	0.91779	0.96320
#2	4.66383	1.02787	0.49491	0.45737	0.52928	4.66905	0.47512	0.91262	0.95872
Mean	4.67252	1.03519	0.49666	0.45797	0.52955	4.68716	0.47635	0.91521	0.96096
%RSD	0.26320	1.00008	0.49840	0.18494	0.07156	0.54638	0.36331	0.39893	0.32934

	Pb	Se
	calc	calc
#1	0.91139	0.94197
#2	0.92905	0.96264
Mean	0.92022	0.95231
%RSD	1.35669	1.53478

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 17:21:10
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:11
[CV]
Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19498	50.91719	0.51956	0.99160	1.01720	0.49952	0.51707	50.64485	0.50115
#2	0.19487	50.78897	0.52293	0.98700	1.01442	0.50026	0.51127	50.66244	0.50163
Mean	0.19492	50.85308	0.52124	0.98930	1.01581	0.49989	0.51417	50.65364	0.50139
%RSD	0.03761	0.17829	0.45825	0.32864	0.19406	0.10385	0.79799	0.02456	0.06677

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.49048	0.99132	1.00911	20.20689	49.12323	0.52206	50.43783	0.98519	0.97868
#2	0.49160	0.99284	1.00816	20.21979	49.05953	0.52191	50.42277	0.98543	0.98038
Mean	0.49104	0.99208	1.00863	20.21334	49.09138	0.52198	50.43030	0.98531	0.97953
%RSD	0.16207	0.10823	0.06656	0.04509	0.09175	0.02077	0.02112	0.01716	0.12274

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.64828	0.97323	4.91064	0.99029	0.97424	5.24048	0.48692	1.03381	0.98830
#2	48.56263	0.97275	4.89305	0.99564	0.98765	5.25545	0.47950	1.01933	1.02234

Mean	48.60545	0.97299	4.90185	0.99296	0.98094	5.24797	0.48321	1.02657	1.00532
%RSD	0.12461	0.03504	0.25382	0.38120	0.96679	0.20181	1.08695	0.99710	2.39410
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	5.01673	1.03257	0.49600	0.51028	0.51122	4.90700	0.49081	1.01230	0.97597
#2	5.00331	1.03549	0.49494	0.51075	0.50932	4.91799	0.49155	1.01230	0.97671
Mean	5.01002	1.03403	0.49547	0.51052	0.51027	4.91249	0.49118	1.01230	0.97634
%RSD	0.18949	0.20022	0.15082	0.06445	0.26263	0.15830	0.10729	0.00000	0.05341
	Pb	Se							
	calc	calc							
#1	0.97958	1.00346							
#2	0.99031	1.02134							
Mean	0.98495	1.01240							
%RSD	0.77020	1.24902							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:12

SampleId1 : CCB

SampleId2 :

[CB]

Analysis commenced : 3/11/2013 17:23:00

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00006	0.05646	-0.00292	-0.00494	0.00066	0.00017	-0.00188	0.00912	0.00004
#2	0.00032	0.05355	-0.00001	-0.00518	0.00062	0.00014	0.00670	0.00865	0.00005
Mean	0.00013	0.05501	-0.00147	-0.00506	0.00064	0.00016	0.00241	0.00889	0.00004
%RSD	205.42395	3.74383	140.58173	3.42813	4.01731	16.02167	251.34167	3.72898	15.63796
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00052	0.00042	-0.00056	0.04637	-0.10027	-0.00237	0.03279	0.00067	0.00036
#2	-0.00038	0.00046	0.00040	0.04629	-0.09909	-0.00237	0.03218	0.00067	-0.00190
Mean	-0.00045	0.00044	-0.00008	0.04633	-0.09968	-0.00237	0.03248	0.00067	-0.00077
%RSD	21.23110	7.41095	843.25785	0.11888	0.83377	0.00000	1.33549	0.00000	207.06265
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05053	-0.00068	-0.00493	0.00030	-0.00179	0.00084	-0.00254	0.00624	0.00618
#2	0.04995	-0.00096	-0.00927	0.00120	-0.00170	0.00084	0.00272	-0.00243	0.00054
Mean	0.05024	-0.00082	-0.00710	0.00075	-0.00175	0.00084	0.00009	0.00190	0.00336
%RSD	0.80652	24.57975	43.21424	85.02231	3.81050	0.00000	4268.62389	322.00174	118.66383
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01293	0.00193	-0.00299	-0.00226	0.00877	-0.01709	0.00044	0.00044	0.00102
#2	0.01312	-0.00209	-0.00295	-0.00223	0.00638	-0.02809	0.00038	0.00027	0.00097
Mean	0.01302	-0.00008	-0.00297	-0.00225	0.00758	-0.02259	0.00041	0.00036	0.00100

%RSD	1.05332	3562.54809	1.11878	0.96071	22.32308	34.40945	9.94889	33.96775	3.51878
	Pb	Se							
	calc	calc							
#1	-0.00110	0.00620							
#2	-0.00074	-0.00045							
Mean	-0.00092	0.00287							
%RSD	27.91101	163.50537							

Method : Paragon2 File : 130311A Printed : 3/12/2013 13:06:12
SampleId1 : 1303058-1 5X **SampleId2 :**
Analysis commenced : 3/11/2013 17:24:41 **[SAMPLE]**
Dilution ratio : 1.00000 to 1.00000 Tray : Position : TUBE66

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00026	20.01090	0.01689	-0.00003	0.19859	0.00133	0.00778	10.39657	-0.00016
#2	0.00126	19.82378	0.02062	0.00126	0.19643	0.00153	0.01059	10.37014	0.00009
Mean	0.00076	19.91734	0.01876	0.00061	0.19751	0.00143	0.00919	10.38336	-0.00003
%RSD	93.54270	0.66430	14.06066	148.58722	0.77134	10.02016	21.62937	0.17997	551.44531

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01458	0.01620	0.01921	41.41478	6.19237	0.01687	5.87543	0.64053	0.00118
#2	0.01589	0.01792	0.01994	41.19282	6.15016	0.01685	5.86128	0.63731	0.00074
Mean	0.01523	0.01706	0.01958	41.30380	6.17126	0.01686	5.86836	0.63892	0.00096
%RSD	6.06780	7.13462	2.63447	0.37999	0.48364	0.07662	0.17048	0.35624	32.55088

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09983	0.01887	0.75228	0.03364	0.02746	1.34061	0.00025	0.00798	0.01410
#2	0.11449	0.02034	0.74725	0.04078	0.01857	1.37048	0.00392	0.01584	0.01380
Mean	0.10716	0.01961	0.74976	0.03721	0.02301	1.35554	0.00208	0.01191	0.01395
%RSD	9.67719	5.29578	0.47473	13.57394	27.30564	1.55817	124.33708	46.63072	1.51838

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.33763	-0.00217	0.11000	0.06373	0.00270	0.08729	0.09332	0.11055	0.00879
#2	3.31296	0.00551	0.10890	0.06398	0.00415	0.11190	0.09396	0.10986	0.00992
Mean	3.32529	0.00167	0.10945	0.06385	0.00342	0.09960	0.09364	0.11020	0.00935
%RSD	0.52458	324.81039	0.71684	0.27913	29.91142	17.47405	0.48513	0.44027	8.57526

	Pb	Se
	calc	calc
#1	0.02952	0.01206
#2	0.02597	0.01448
Mean	0.02774	0.01327
%RSD	9.04622	12.87361

ted: 3/12/2013 13:06:30 User: STEVE WORKMAN
 Method : Paragon2 File : 130311A
 SampleId1 : 1303058-1D 5X SampleId2 :
 Analysis commenced : 3/11/2013 17:26:26
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:12
 [SAMPLE]
 Position : TUBE67

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00077	19.94822	0.01631	-0.00089	0.19888	0.00136	0.00585	10.38438	-0.00031
#2	-0.00164	19.90500	0.01666	-0.00187	0.19910	0.00136	-0.00099	10.35479	-0.00069
Mean	-0.00120	19.92661	0.01648	-0.00138	0.19899	0.00136	0.00243	10.36959	-0.00050
%RSD	51.25864	0.15336	1.49994	50.26891	0.07786	0.22865	198.80234	0.20179	53.41248
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01450	0.01647	0.01799	41.85293	6.22889	0.01725	5.90619	0.64416	0.00017
#2	0.01396	0.01641	0.01857	41.69516	6.20328	0.01723	5.87758	0.64220	0.00030
Mean	0.01423	0.01644	0.01828	41.77405	6.21608	0.01724	5.89189	0.64318	0.00023
%RSD	2.69154	0.28364	2.24852	0.26705	0.29134	0.07492	0.34330	0.21627	38.15805
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.09782	0.01957	0.74267	0.02863	0.02805	1.44516	-0.00319	0.02145	0.01549
#2	0.10208	0.01911	0.75342	0.03163	0.02725	1.42275	-0.00437	0.01003	0.01784
Mean	0.09995	0.01934	0.74805	0.03013	0.02765	1.43395	-0.00378	0.01574	0.01667
%RSD	3.01373	1.68244	1.01652	7.03391	2.04813	1.10478	22.17307	51.31774	9.98479
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.46941	0.00186	0.10883	0.06010	-0.00100	0.08398	0.09237	0.11295	0.00924
#2	2.46653	-0.00363	0.10850	0.05984	-0.00037	0.06720	0.09217	0.11140	0.00907
Mean	2.46797	-0.00088	0.10866	0.05997	-0.00068	0.07559	0.09227	0.11218	0.00915
%RSD	0.08236	438.96097	0.21416	0.30621	64.70485	15.70139	0.15509	0.97319	1.29762
	Pb calc	Se calc							
#1	0.02824	0.01747							
#2	0.02871	0.01524							
Mean	0.02848	0.01636							
%RSD	1.15157	9.65562							

Method : Paragon2 File : 130311A
 SampleId1 : 1303058-1L 25X SampleId2 :
 Analysis commenced : 3/11/2013 17:28:11
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:12
 [SAMPLE]
 Position : TUBE68

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00094	3.91825	0.00314	-0.00659	0.03838	-0.00015	-0.00465	2.02222	-0.00043
#2	-0.00057	3.91592	0.00442	-0.00684	0.03813	-0.00017	-0.00237	2.01376	-0.00049
Mean	-0.00076	3.91708	0.00378	-0.00672	0.03825	-0.00016	-0.00351	2.01799	-0.00046
%RSD	35.03508	0.04199	23.98789	2.58289	0.47208	7.71047	45.84403	0.29630	10.28908

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00136	0.00167	0.00086	7.93150	0.97811	0.00055	1.14322	0.12841	-0.00209
#2	0.00204	0.00241	0.00114	7.90969	0.98117	0.00057	1.13677	0.12776	-0.00297
Mean	0.00170	0.00204	0.00100	7.92059	0.97964	0.00056	1.14000	0.12808	-0.00253
%RSD	28.16871	25.48974	20.13374	0.19468	0.22091	2.30210	0.39977	0.36049	24.56822

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.02532	0.00123	0.13482	0.00165	0.00592	0.25451	-0.00099	-0.00558	0.00601
#2	0.02667	0.00197	0.13985	0.00363	0.00360	0.25824	-0.00101	-0.00023	0.00794
Mean	0.02599	0.00160	0.13734	0.00264	0.00476	0.25638	-0.00100	-0.00290	0.00698
%RSD	3.67321	32.88788	2.58715	53.17914	34.46965	1.02897	1.14471	130.42602	19.60359

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	0.67136	-0.00394	0.01842	0.01036	-0.00183	-0.01917	0.01706	0.03182	0.00105
#2	0.66800	-0.00138	0.01829	0.01078	0.00101	-0.02175	0.01757	0.03114	0.00105
Mean	0.66968	-0.00266	0.01835	0.01057	-0.00041	-0.02046	0.01732	0.03148	0.00105
%RSD	0.35500	68.17365	0.50680	2.80981	492.37573	8.92649	2.08489	1.54079	0.04139

	Pb calc	Se calc
#1	0.00450	0.00215
#2	0.00361	0.00522
Mean	0.00406	0.00369
%RSD	15.47310	58.95973

Method : Paragon2 File : 130311A
SampleId1 : 1303058-1MS 5X SampleId2 :
Analysis commenced : 3/11/2013 17:29:57
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:12

[SAMPLE]

Position : TUBE69

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.01759	25.76109	0.21886	0.15494	0.40312	0.01172	0.00174	17.52230	0.00974
#2	0.01787	25.69397	0.21245	0.15286	0.40005	0.01168	-0.00282	17.49421	0.00992
Mean	0.01773	25.72753	0.21565	0.15390	0.40159	0.01170	-0.00054	17.50826	0.00983
%RSD	1.14628	0.18448	2.10145	0.95800	0.54071	0.19923	596.43004	0.11347	1.25597

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.11244	0.05946	0.06951	41.60470	14.25097	0.11365	14.31792	0.69860	0.17556
#2	0.11293	0.05877	0.06933	41.48888	14.21189	0.11338	14.29137	0.69663	0.17342
Mean	0.11269	0.05911	0.06942	41.54679	14.23143	0.11352	14.30465	0.69762	0.17449
%RSD	0.30941	0.82285	0.18092	0.19713	0.19417	0.16570	0.13126	0.19948	0.86629

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	7.03566	0.11930	0.72711	0.13288	0.12484	1.31820	0.05596	0.38573	0.37795
#2	7.00975	0.11950	0.73421	0.12710	0.12833	1.32941	0.05741	0.38475	0.38226
Mean	7.02270	0.11940	0.73066	0.12999	0.12658	1.32381	0.05669	0.38524	0.38011
%RSD	0.26089	0.11682	0.68639	3.14480	1.94987	0.59831	1.80844	0.17873	0.80214

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.40206	0.10238	0.20809	0.13214	0.37771	0.06850	0.19869	0.21933	0.00810
#2	2.39486	0.10092	0.20683	0.13206	0.37836	0.05753	0.19804	0.21933	0.00797
Mean	2.39846	0.10165	0.20746	0.13210	0.37804	0.06302	0.19836	0.21933	0.00803
%RSD	0.21215	1.01792	0.42664	0.04496	0.12177	12.31121	0.23235	0.00000	1.12236

	Pb calc	Se calc
#1	0.12752	0.38054
#2	0.12792	0.38309
Mean	0.12772	0.38182
%RSD	0.22314	0.47258

Method : Paragon2 File : 130311A
SampleId1 : 1303058-1MSD 5X SampleId2 :
Analysis commenced : 3/11/2013 17:31:42
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:12
[SAMPLE]

Position : TUBE70

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.01823	25.32781	0.21688	0.15390	0.39333	0.01164	0.00506	17.77937	0.01043
#2	0.01736	25.54067	0.21466	0.15133	0.39640	0.01172	0.00103	17.85810	0.00931
Mean	0.01780	25.43424	0.21577	0.15261	0.39486	0.01168	0.00305	17.81874	0.00987
%RSD	3.45007	0.59179	0.72556	1.19340	0.54990	0.44948	93.48603	0.31244	8.01034

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.11188	0.05874	0.06827	41.08172	13.93263	0.11104	14.27284	0.70457	0.17525
#2	0.11306	0.05856	0.06848	41.33938	14.05199	0.11202	14.35220	0.70892	0.17481
Mean	0.11247	0.05865	0.06838	41.21055	13.99231	0.11153	14.31252	0.70674	0.17503
%RSD	0.74048	0.21497	0.21689	0.44211	0.60318	0.61839	0.39205	0.43561	0.17781

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
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#1	6.86112	0.12050	0.72505	0.13421	0.12298	1.36301	0.05756	0.38119	0.37195
#2	6.92938	0.11941	0.72483	0.13235	0.12815	1.39661	0.05914	0.38227	0.38754
Mean	6.89525	0.11996	0.72494	0.13328	0.12556	1.37981	0.05835	0.38173	0.37974
%RSD	0.69998	0.64598	0.02232	0.98586	2.90984	1.72213	1.91897	0.20007	2.90360

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.30475	0.10275	0.20750	0.13259	0.38543	0.07701	0.19627	0.21709	0.00803
#2	2.32760	0.10128	0.20893	0.13339	0.38042	0.05497	0.19712	0.21624	0.00788
Mean	2.31618	0.10202	0.20822	0.13299	0.38293	0.06599	0.19670	0.21667	0.00795
%RSD	0.69781	1.01499	0.48581	0.42635	0.92467	23.60882	0.30636	0.28004	1.27139

	Pb	Se
	calc	calc
#1	0.12672	0.37503
#2	0.12955	0.38579
Mean	0.12814	0.38041
%RSD	1.56045	2.00018

Method : Paragon2 File : 130311A
SampleId1 : CCV **SampleId2 :**
Analysis commenced : 3/11/2013 17:33:28
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:13
[CV]

Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19597	50.84617	0.51886	0.99319	1.01797	0.49968	0.51355	50.70526	0.50431
#2	0.19472	50.66727	0.52433	0.98007	1.01126	0.49904	0.50931	50.53863	0.49912
Mean	0.19534	50.75672	0.52159	0.98663	1.01462	0.49936	0.51143	50.62195	0.50172
%RSD	0.45180	0.24924	0.74219	0.94025	0.46781	0.09049	0.58561	0.23276	0.73196

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.49116	0.99127	1.00894	20.21442	49.11194	0.52140	50.45289	0.98490	0.97918
#2	0.48988	0.98683	1.00349	20.17350	49.02743	0.52045	50.30101	0.98376	0.98258
Mean	0.49052	0.98905	1.00621	20.19396	49.06969	0.52093	50.37695	0.98433	0.98088
%RSD	0.18375	0.31770	0.38275	0.14328	0.12178	0.12806	0.21319	0.08159	0.24515

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.70612	0.97558	4.90231	0.99267	0.94976	5.24048	0.48640	1.03241	0.95970
#2	48.53961	0.96672	4.90347	0.98630	0.98395	5.16933	0.47881	1.03449	1.01558
Mean	48.62286	0.97115	4.90289	0.98949	0.96686	5.20491	0.48260	1.03345	0.98764
%RSD	0.24216	0.64473	0.01669	0.45536	2.50003	0.96649	1.11231	0.14173	4.00091

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	5.00785	1.04062	0.49716	0.51018	0.51978	4.89082	0.49038	1.01126	0.97562

#2	4.99594	1.03659	0.49353	0.50985	0.51489	4.89277	0.49009	1.00954	0.97295
Mean	5.00190	1.03861	0.49534	0.51001	0.51733	4.89179	0.49023	1.01040	0.97428
%RSD	0.16828	0.27412	0.51723	0.04548	0.66953	0.02817	0.04168	0.12050	0.19373
	Pb	Se							
	calc	calc							
#1	0.96405	0.98391							
#2	0.98473	1.02188							
Mean	0.97439	1.00289							
%RSD	1.50064	2.67665							

Method : Paragon2 File : 130311A
SampleId1 : CCB SampleId2 :
Analysis commenced : 3/11/2013 17:36:13
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:13
[CB]

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00096	0.06530	0.00057	-0.00580	0.00095	0.00021	-0.00117	0.01521	-0.00003
#2	0.00096	0.06319	-0.00444	-0.00641	0.00095	0.00019	0.00443	0.01474	0.00031
Mean	0.00096	0.06425	-0.00193	-0.00610	0.00095	0.00020	0.00163	0.01498	0.00014
%RSD	0.50493	2.32646	183.44614	7.10615	0.00000	9.79471	242.93728	2.21232	173.02695

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00011	0.00066	0.00066	0.05097	-0.09768	-0.00240	0.04230	0.00103	0.00061
#2	-0.00011	0.00092	-0.00027	0.05034	-0.09956	-0.00237	0.04383	0.00091	-0.00140
Mean	-0.00011	0.00079	0.00019	0.05066	-0.09862	-0.00238	0.04307	0.00097	-0.00040
%RSD	0.17219	23.02659	341.98090	0.86990	1.34834	0.69705	2.51829	8.67765	359.51997

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05229	-0.00094	-0.00287	0.00014	-0.00212	-0.00289	-0.00057	0.00102	0.00142
#2	0.05221	0.00005	-0.00013	0.00480	-0.00168	0.00457	-0.00217	0.00624	0.00177
Mean	0.05225	-0.00045	-0.00150	0.00247	-0.00190	0.00084	-0.00137	0.00363	0.00160
%RSD	0.11080	155.99311	128.77809	133.62596	16.44091	625.32128	82.65946	101.53600	15.59218

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01347	0.00632	-0.00285	-0.00209	0.00926	-0.00804	0.00058	0.00044	0.00123
#2	0.01507	-0.00026	-0.00286	-0.00196	-0.00196	-0.01709	0.00064	-0.00007	0.00109
Mean	0.01427	0.00303	-0.00286	-0.00202	0.00365	-0.01257	0.00061	0.00019	0.00116
%RSD	7.88775	153.70480	0.23259	4.53772	217.50024	50.93379	6.60624	196.10940	8.47738

	Pb	Se
	calc	calc
#1	-0.00137	0.00129
#2	0.00048	0.00326

Mean -0.00045 0.00227ser: STEVE WORKMAN
%RSD 293.49689 61.26989

Method : Paragon2 File : 130311A
SampleId1 : 1303058-1A SampleId2 :
Analysis commenced : 3/11/2013 17:38:03
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:13
[SAMPLE]

Position : TUBE71

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00181	99.13951	1.04135	0.91993	1.88331	0.05459	0.01238	88.52830	0.04945
#2	-0.00176	98.47384	1.02890	0.92024	1.87358	0.05448	0.01324	88.16210	0.04916
Mean	-0.00179	98.80668	1.03512	0.92008	1.87845	0.05454	0.01281	88.34520	0.04931
%RSD	1.91211	0.47638	0.85088	0.02356	0.36624	0.14272	4.79652	0.29310	0.41948
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.52422	0.26164	0.34569	214.20050	77.64665	0.64126	66.97262	3.37983	0.93038
#2	0.52208	0.26125	0.34372	213.50833	77.15771	0.63741	66.74567	3.37015	0.92931
Mean	0.52315	0.26144	0.34470	213.85441	77.40218	0.63934	66.85915	3.37499	0.92984
%RSD	0.28893	0.10426	0.40498	0.22887	0.44668	0.42643	0.24002	0.20292	0.08140
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	41.14996	0.55802	3.55490	0.61134	0.57520	6.34552	0.45510	1.85321	1.75463
#2	40.87390	0.54949	3.55813	0.59633	0.59006	6.30805	0.45020	1.83148	1.80157
Mean	41.01193	0.55376	3.55651	0.60384	0.58263	6.32679	0.45265	1.84235	1.77810
%RSD	0.47597	1.08870	0.06420	1.75700	1.80301	0.41882	0.76499	0.83405	1.86682
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	16.49588	0.49460	0.99635	0.77987	1.80022	0.46796	0.90353	0.97941	0.04158
#2	16.43996	0.48765	0.99000	0.77937	1.77606	0.46679	0.89781	0.97907	0.04132
Mean	16.46792	0.49112	0.99317	0.77962	1.78814	0.46738	0.90067	0.97924	0.04145
%RSD	0.24010	1.00097	0.45210	0.04494	0.95538	0.17673	0.44880	0.02486	0.43878
	Pb calc	Se calc							
#1	0.58724	1.78746							
#2	0.59215	1.81153							
Mean	0.58969	1.79950							
%RSD	0.58910	0.94602							

Method : Paragon2 File : 130311A
SampleId1 : 1303058-1A 5X SampleId2 :
Analysis commenced : 3/11/2013 17:39:49
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:13
[SAMPLE]

Position : TUBE72

Final concentrations6:30 User: STEVE WORKMAN

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00038	22.06098	0.98047	0.90141	1.16428	0.04940	0.00531	10.48203	0.04830
#2	0.00027	22.04260	0.98780	0.90472	1.17390	0.04991	-0.00097	10.44595	0.04800
Mean	-0.00006	22.05179	0.98413	0.90307	1.16909	0.04966	0.00217	10.46399	0.04815
%RSD	775.95135	0.05894	0.52697	0.25922	0.58176	0.71882	204.61290	0.24384	0.43656

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48374	0.20695	0.26536	42.95573	6.27893	0.01740	5.93449	1.11893	0.93075
#2	0.48785	0.20859	0.26771	42.81691	6.26802	0.01734	5.88312	1.12281	0.94070
Mean	0.48580	0.20777	0.26653	42.88632	6.27347	0.01737	5.90880	1.12087	0.93573
%RSD	0.59853	0.55811	0.62336	0.22889	0.12297	0.25500	0.61471	0.24538	0.75184

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.11548	0.49816	0.77539	0.50450	0.49330	1.34807	0.44972	1.84218	1.78581
#2	0.11748	0.50079	0.75892	0.50861	0.49676	1.32941	0.45584	1.85686	1.82114
Mean	0.11648	0.49948	0.76715	0.50656	0.49503	1.33874	0.45278	1.84952	1.80348
%RSD	1.21871	0.37234	1.51852	0.57471	0.49443	0.98606	0.95556	0.56101	1.38516

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.95945	0.48609	0.58049	0.54410	1.82461	0.07408	0.56600	0.59598	0.00823
#2	4.96904	0.49157	0.58530	0.55163	1.80887	0.07669	0.57050	0.59890	0.00841
Mean	4.96424	0.48883	0.58290	0.54786	1.81674	0.07539	0.56825	0.59744	0.00832
%RSD	0.13672	0.79274	0.58422	0.97164	0.61284	2.44972	0.55942	0.34585	1.58379

	Pb	Se
	calc	calc
#1	0.49703	1.80458
#2	0.50071	1.83304
Mean	0.49887	1.81881
%RSD	0.52157	1.10608

Method : Paragon2 File : 130311A
SampleId1 : 1303059-1A SampleId2 :
Analysis commenced : 3/11/2013 17:41:34
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:13
[SAMPLE]
Position : TUBE73

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00072	28.61332	1.78568	0.86077	1.30185	0.04825	0.01143	146.00026	0.04713
#2	-0.00198	28.84013	1.79906	0.87364	1.32217	0.04903	0.00394	146.15983	0.04756
Mean	-0.00135	28.72672	1.79237	0.86720	1.31201	0.04864	0.00768	146.08005	0.04735
%RSD	66.36946	0.55828	0.52765	1.04979	1.09501	1.12194	68.94107	0.07724	0.64453

ted: 3/12/2013 13:06:30 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.44562	0.18562	0.25970	87.59898	50.46831	0.53999	47.88169	1.28323	2.15331
#2	0.45209	0.18870	0.26495	87.95291	50.63563	0.54144	47.90019	1.29630	2.17294
Mean	0.44885	0.18716	0.26232	87.77594	50.55197	0.54071	47.89094	1.28977	2.16313
%RSD	1.01978	1.16322	1.41588	0.28511	0.23404	0.18962	0.02731	0.71617	0.64171

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	39.61831	0.45091	2.01804	0.53408	0.51666	37.44827	0.43162	2.10663	2.02778
#2	39.71294	0.45808	2.03940	0.53761	0.52645	37.76246	0.43486	2.14087	2.07886
Mean	39.66563	0.45449	2.02872	0.53585	0.52155	37.60536	0.43324	2.12375	2.05332
%RSD	0.16869	1.11506	0.74439	0.46532	1.32724	0.59079	0.52856	1.14001	1.75928

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	12.86929	0.45497	0.77510	0.55520	1.72514	1.34583	1.61286	0.54888	0.02095
#2	12.97754	0.47106	0.78525	0.56495	1.74233	1.36258	1.62575	0.55559	0.02048
Mean	12.92341	0.46302	0.78017	0.56007	1.73374	1.35420	1.61931	0.55223	0.02072
%RSD	0.59231	2.45715	0.91997	1.23160	0.70098	0.87470	0.56261	0.85819	1.59173

	Pb	Se
	calc	calc
#1	0.52246	2.05404
#2	0.53016	2.09951
Mean	0.52631	2.07677
%RSD	1.03502	1.54840

Method : Paragon2 File : 130311A

SampleId1 : 1303060-1A SampleId2 :

Analysis commenced : 3/11/2013 17:43:19

Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:14

[SAMPLE]

Position : TUBE74

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00119	64.24430	0.90700	0.81436	1.58963	0.04755	0.00471	176.21405	0.04397
#2	-0.00100	63.99870	0.91422	0.82784	1.59828	0.04829	0.00525	176.05686	0.04448
Mean	-0.00109	64.12150	0.91061	0.82110	1.59395	0.04792	0.00498	176.13546	0.04422
%RSD	12.34504	0.27083	0.56053	1.16155	0.38361	1.08781	7.72526	0.06311	0.82708

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.45387	0.22212	0.31365	149.50779	56.19316	0.54966	74.65419	2.25594	0.83606
#2	0.46056	0.22593	0.31648	149.11495	56.36190	0.55286	74.82038	2.25805	0.84985
Mean	0.45721	0.22402	0.31506	149.31137	56.27753	0.55126	74.73729	2.25699	0.84295
%RSD	1.03443	1.20244	0.63494	0.18604	0.21202	0.41061	0.15724	0.06621	1.15659

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	36.44875	0.48514	3.65824	0.51216	0.49543	4.53671	0.40357	1.55365	1.52251
#2	36.71822	0.49251	3.64094	0.51777	0.50373	4.49554	0.40504	1.56912	1.52869
Mean	36.58349	0.48883	3.64959	0.51497	0.49958	4.51612	0.40431	1.56139	1.52560
%RSD	0.52085	1.06528	0.33524	0.77102	1.17562	0.64456	0.25781	0.70095	0.28674

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	18.43495	0.43689	0.93920	0.69160	1.58439	0.23781	0.58618	0.79699	0.03016
#2	18.40800	0.44346	0.94213	0.69871	1.60253	0.23077	0.58982	0.80456	0.03022
Mean	18.42148	0.44017	0.94066	0.69515	1.59346	0.23429	0.58800	0.80078	0.03019
%RSD	0.10346	1.05677	0.22004	0.72356	0.80497	2.12543	0.43798	0.66839	0.15056

	Pb	Se
	calc	calc
#1	0.50100	1.53288
#2	0.50841	1.54216
Mean	0.50470	1.53752
%RSD	1.03815	0.42682

Method : Paragon2 File : 130311A
SampleId1 : 1303058-2 5X SampleId2 :
Analysis commenced : 3/11/2013 17:45:05
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:14
[SAMPLE]

Position : TUBE75

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00044	11.30605	0.01713	0.00095	0.24690	0.00075	0.00037	17.89771	-0.00013
#2	0.00007	11.32774	0.01398	-0.00095	0.24679	0.00063	0.00334	17.85251	-0.00037
Mean	-0.00019	11.31690	0.01555	0.00000	0.24685	0.00069	0.00186	17.87511	-0.00025
%RSD	192.70733	0.13549	14.30890343420	7.4961	0.03139	11.45870	113.42193	0.17880	67.90148

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00750	0.00811	0.00855	25.44568	2.56074	0.00887	3.81530	0.34230	0.00067
#2	0.00737	0.00811	0.00807	25.49114	2.52441	0.00853	3.77812	0.34236	-0.00040
Mean	0.00744	0.00811	0.00831	25.46841	2.54257	0.00870	3.79671	0.34233	0.00014
%RSD	1.28240	0.02651	4.04277	0.12623	1.01050	2.73667	0.69248	0.01228	544.86396

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08123	0.00986	0.43301	0.01954	0.01574	1.44889	0.00248	0.01501	0.02180
#2	0.05622	0.01094	0.44239	0.01968	0.01641	1.41155	-0.00227	0.01735	0.01969
Mean	0.06873	0.01040	0.43770	0.01961	0.01608	1.43022	0.00011	0.01618	0.02075
%RSD	25.73851	7.30049	1.51414	0.53662	2.92468	1.84611	3160.94751	10.22573	7.18030

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.11082	-0.00288	0.06805	0.04299	0.00062	0.10893	0.12512	0.05892	0.00466
#2	3.11549	0.00188	0.06751	0.04258	0.00148	0.11345	0.12502	0.05755	0.00479
Mean	3.11315	-0.00050	0.06778	0.04278	0.00105	0.11119	0.12507	0.05823	0.00473
%RSD	0.10609	675.22494	0.55896	0.68174	57.97128	2.87333	0.05980	1.66603	2.06312

	Pb calc	Se calc
#1	0.01701	0.01954
#2	0.01750	0.01892
Mean	0.01725	0.01923
%RSD	2.02083	2.30182

Method : Paragon2 File : 130311A
SampleId1 : 1303058-3 5X SampleId2 :
Analysis commenced : 3/11/2013 17:46:50
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:14

[SAMPLE]

Position : TUBE76

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00074	14.27001	0.01631	-0.00187	0.42641	0.00067	0.00056	20.78071	-0.00033
#2	-0.00022	14.19686	0.01654	-0.00071	0.42554	0.00063	0.00300	20.74609	-0.00065
Mean	-0.00048	14.23344	0.01643	-0.00129	0.42597	0.00065	0.00178	20.76340	-0.00049
%RSD	76.87999	0.36338	1.00351	63.95691	0.14566	4.19840	97.27531	0.11790	46.51451

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00837	0.01096	0.01057	28.20057	2.93104	0.01294	5.38674	0.39482	-0.00102
#2	0.00805	0.01093	0.01011	28.19106	2.90932	0.01292	5.37813	0.39476	-0.00014
Mean	0.00821	0.01095	0.01034	28.19582	2.92018	0.01293	5.38243	0.39479	-0.00058
%RSD	2.73477	0.20168	3.14669	0.02384	0.52589	0.08564	0.11312	0.01066	106.51717

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.06379	0.01304	0.53773	0.01856	0.01794	1.14273	-0.00113	0.02074	0.01827
#2	0.06187	0.01381	0.53818	0.01913	0.01792	1.12033	0.00178	0.01606	0.01783
Mean	0.06283	0.01343	0.53796	0.01885	0.01793	1.13153	0.00032	0.01840	0.01805
%RSD	2.16552	4.03994	0.06011	2.14428	0.10352	1.39975	637.31877	17.99316	1.73030

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.10338	0.00040	0.07456	0.05316	-0.00416	0.06511	0.09758	0.08293	0.00566
#2	2.10237	0.00297	0.07433	0.05309	-0.00167	0.05412	0.09758	0.08293	0.00530
Mean	2.10288	0.00168	0.07444	0.05312	-0.00291	0.05961	0.09758	0.08293	0.00548
%RSD	0.03392	107.47567	0.22322	0.09151	60.50622	13.03711	0.00131	0.00000	4.60275

	Pb calc	Se calc
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#1 0.01815 0.01910
 #2 0.01832 0.01724
Mean 0.01824 0.01817
 %RSD 0.67017 7.21555

ser: STEVE WORKMAN

Method : Paragon2 File : 130311A
 SampleId1 : 1303058-4 5X SampleId2 :
 Analysis commenced : 3/11/2013 17:48:36
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:14
 [SAMPLE]

Position : TUBE77

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00028	16.15772	0.01969	-0.00199	0.18602	0.00119	0.00060	26.62188	-0.00019
#2	-0.00068	16.06259	0.01386	-0.00285	0.18460	0.00115	0.00252	26.50503	-0.00066
Mean	-0.00048	16.11015	0.01678	-0.00242	0.18531	0.00117	0.00156	26.56345	-0.00043
%RSD	59.45630	0.41755	24.56481	25.05798	0.54339	2.41966	87.11509	0.31105	77.89591

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01164	0.01283	0.01384	39.26094	4.22349	0.01618	5.57987	0.46719	-0.00040
#2	0.01205	0.01279	0.01386	39.08995	4.21876	0.01611	5.54573	0.46564	-0.00153
Mean	0.01185	0.01281	0.01385	39.17544	4.22112	0.01614	5.56280	0.46641	-0.00096
%RSD	2.41590	0.25509	0.08663	0.30864	0.07923	0.28580	0.43392	0.23464	83.22271

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.10396	0.01513	0.69211	0.03168	0.02499	2.71906	0.00161	0.03886	0.03693
#2	0.10470	0.01445	0.68799	0.02771	0.02488	2.69290	0.00187	0.04434	0.03919
Mean	0.10433	0.01479	0.69005	0.02970	0.02494	2.70598	0.00174	0.04160	0.03806
%RSD	0.49973	3.24937	0.42196	9.46264	0.30355	0.68366	10.47480	9.31522	4.20612

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.21928	0.00040	0.11175	0.05440	0.00173	0.18856	0.22439	0.08636	0.00874
#2	2.20545	0.00296	0.11083	0.05442	-0.00087	0.17113	0.22418	0.08825	0.00839
Mean	2.21237	0.00168	0.11129	0.05441	0.00043	0.17984	0.22428	0.08730	0.00856
%RSD	0.44179	107.56706	0.58549	0.02978	426.54717	6.85257	0.06461	1.52816	2.84258

	Pb calc	Se calc
#1	0.02722	0.03757
#2	0.02582	0.04091
Mean	0.02652	0.03924
%RSD	3.71843	6.01003

Method : Paragon2 File : 130311A
 SampleId1 : 1303058-5 5X SampleId2 :
 Analysis commenced : 3/11/2013 17:50:21

Printed : 3/12/2013 13:06:14
 [SAMPLE]

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE78

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00246	13.24441	0.01188	-0.00408	0.36281	0.00084	0.00583	16.58429	-0.00031
#2	-0.00074	13.23895	0.00967	-0.00463	0.36167	0.00083	0.00741	16.57521	-0.00031
Mean	-0.00160	13.24168	0.01077	-0.00435	0.36224	0.00083	0.00662	16.57975	-0.00031
%RSD	75.79370	0.02917	14.53599	8.96253	0.22118	0.42917	16.85938	0.03876	0.14713

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00842	0.00994	0.01120	29.93581	2.73442	0.01128	4.57475	0.44165	-0.00109
#2	0.00833	0.01030	0.01148	29.95669	2.73631	0.01127	4.58182	0.44147	0.00042
Mean	0.00838	0.01012	0.01134	29.94625	2.73536	0.01127	4.57829	0.44156	-0.00033
%RSD	0.77933	2.52854	1.71423	0.04930	0.04881	0.04911	0.10920	0.02859	320.57479

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05401	0.01239	0.69989	0.02179	0.02497	3.35085	0.00297	0.05975	0.05387
#2	0.05368	0.01210	0.68365	0.02658	0.02444	3.36207	0.00192	0.05935	0.06409
Mean	0.05384	0.01224	0.69177	0.02419	0.02470	3.35646	0.00245	0.05955	0.05898
%RSD	0.43006	1.64561	1.66026	14.00499	1.51398	0.23633	30.40664	0.48087	12.25731

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.55069	-0.00178	0.05497	0.04831	-0.00045	0.18766	0.18884	0.06921	0.00636
#2	1.55480	-0.00252	0.05479	0.04847	0.00231	0.19542	0.18810	0.06938	0.00687
Mean	1.55274	-0.00215	0.05488	0.04839	0.00093	0.19154	0.18847	0.06929	0.00662
%RSD	0.18704	24.06032	0.23007	0.24556	209.46932	2.86335	0.27807	0.17502	5.39379

	Pb	Se
	calc	calc
#1	0.02391	0.05583
#2	0.02515	0.06251
Mean	0.02453	0.05917
%RSD	3.58142	7.98830

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:15

SampleId1 : 1303058-6 5X

SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 17:52:07

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE79

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00050	10.71910	0.01841	-0.00543	0.12615	0.00104	0.00070	13.13195	-0.00060
#2	-0.00087	10.64010	0.01514	-0.00543	0.12505	0.00100	0.00893	13.05494	0.00003

Mean	-0.00068	10.67960	0.01678	-0.00543	0.12560	0.00102	0.00481	13.09345	-0.00029
%RSD	38.40596	0.52305	13.75629	0.00000	0.61650	2.90840	120.78828	0.41588	155.67801
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00875	0.00889	0.01015	34.77482	2.56192	0.01010	3.58915	0.37882	0.00074
#2	0.00902	0.00858	0.00846	34.55668	2.54304	0.00999	3.56334	0.37674	-0.00008
Mean	0.00888	0.00874	0.00930	34.66575	2.55248	0.01005	3.57625	0.37778	0.00033
%RSD	2.14916	2.48747	12.86400	0.44496	0.52290	0.77145	0.51031	0.38968	176.56612
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.07890	0.00962	0.53201	0.03294	0.03164	3.36581	-0.00478	0.06701	0.06626
#2	0.07902	0.01046	0.53544	0.03667	0.03178	3.32468	0.00010	0.07374	0.06975
Mean	0.07896	0.01004	0.53373	0.03481	0.03171	3.34524	-0.00234	0.07038	0.06800
%RSD	0.11001	5.86552	0.45442	7.56758	0.32577	0.86943	147.33240	6.76453	3.62947
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.42744	-0.00143	0.06425	0.05799	-0.00517	0.59354	0.38283	0.07161	0.00398
#2	1.41884	0.00223	0.06349	0.05780	-0.00205	0.59099	0.37924	0.07178	0.00400
Mean	1.42314	0.00040	0.06387	0.05790	-0.00361	0.59227	0.38103	0.07170	0.00399
%RSD	0.42720	648.50734	0.84290	0.23322	61.08656	0.30412	0.66684	0.16916	0.37975
	Pb	Se							
	calc	calc							
#1	0.03207	0.06651							
#2	0.03341	0.07108							
Mean	0.03274	0.06879							
%RSD	2.88952	4.69748							

Method : Paragon2 File : 130311A
SampleId1 : 1303058-7 5X SampleId2 :
Analysis commenced : 3/11/2013 17:53:52
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:15

[SAMPLE]

Position : TUBE80

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00085	11.39203	0.00897	-0.00389	0.15583	0.00081	0.00284	17.46739	-0.00020
#2	-0.00150	11.42296	0.01468	-0.00610	0.15550	0.00078	-0.00451	17.44281	-0.00071
Mean	-0.00118	11.40750	0.01182	-0.00500	0.15566	0.00079	-0.00084	17.45510	-0.00046
%RSD	39.00027	0.19175	34.16108	31.23175	0.14926	2.86090	622.82363	0.09959	78.03037
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00856	0.00848	0.00862	27.67956	2.10551	0.00998	3.93177	0.32767	-0.00077
#2	0.00811	0.00786	0.00797	27.65181	2.10739	0.00997	3.92778	0.32732	-0.00190
Mean	0.00833	0.00817	0.00829	27.66569	2.10645	0.00998	3.92977	0.32750	-0.00134

%RSD	3.84067	5.32921	5.59211	0.07091	0.06332	0.07399	0.07188	0.07703	59.77284
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	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.06870	0.01120	0.42593	0.01904	0.01738	1.85596	-0.00122	0.02296	0.02691
#2	0.06821	0.01142	0.42890	0.01895	0.01930	1.83729	-0.00399	0.02543	0.02655
Mean	0.06846	0.01131	0.42741	0.01899	0.01834	1.84663	-0.00261	0.02419	0.02673
%RSD	0.50747	1.37009	0.49163	0.31730	7.41091	0.71513	75.04996	7.22069	0.94351

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.79436	-0.00031	0.07720	0.03927	0.00239	0.22687	0.19605	0.05926	0.00535
#2	1.79726	-0.00470	0.07716	0.03937	-0.00908	0.22364	0.19525	0.05943	0.00512
Mean	1.79581	-0.00251	0.07718	0.03932	-0.00335	0.22525	0.19565	0.05935	0.00523
%RSD	0.11414	123.86676	0.03445	0.17858	242.20693	1.01341	0.29155	0.20434	3.08721

	Pb	Se
	calc	calc
#1	0.01793	0.02559
#2	0.01919	0.02618
Mean	0.01856	0.02589
%RSD	4.77724	1.59749

Method : Paragon2
SampleId1 : CCV
Analysis commenced : 3/11/2013 17:55:38
Dilution ratio : 1.00000 to 1.00000

File : 130311A

Printed : 3/12/2013 13:06:15

SampleId2 :

[CV]

Tray :

Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19466	50.67068	0.51909	0.99227	1.01574	0.49811	0.52146	50.57365	0.50330
#2	0.19341	50.73325	0.52049	0.98583	1.01442	0.49816	0.51566	50.51805	0.49985
Mean	0.19404	50.70197	0.51979	0.98905	1.01508	0.49813	0.51856	50.54585	0.50157
%RSD	0.45640	0.08726	0.19015	0.46021	0.09199	0.00728	0.79165	0.07777	0.48731

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.49012	0.98717	1.00968	20.16209	48.91535	0.51995	50.28344	0.98137	0.98050
#2	0.48867	0.98675	1.00893	20.14989	48.96199	0.52029	50.25551	0.98173	0.97987
Mean	0.48940	0.98696	1.00930	20.15599	48.93867	0.52012	50.26948	0.98155	0.98019
%RSD	0.20954	0.03026	0.05235	0.04278	0.06738	0.04699	0.03928	0.02584	0.04543

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.50154	0.97641	4.87314	0.98891	0.96619	5.21801	0.48528	1.00042	0.98661
#2	48.52146	0.97010	4.87360	0.98907	0.98096	5.30413	0.48515	1.00055	1.01895
Mean	48.51150	0.97325	4.87337	0.98899	0.97358	5.26107	0.48521	1.00049	1.00278
%RSD	0.02903	0.45862	0.00672	0.01149	1.07285	1.15752	0.01886	0.00949	2.28079

ted: 3/12/2013 13:06:31 User: STEVE WORKMAN

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.99030	1.03110	0.49579	0.50744	0.50870	4.90183	0.49006	1.00420	0.97386
#2	4.99884	1.03037	0.49488	0.50817	0.50298	4.89795	0.48937	1.00747	0.97333
Mean	4.99457	1.03074	0.49534	0.50780	0.50584	4.89989	0.48971	1.00584	0.97360
%RSD	0.12090	0.05028	0.12931	0.10197	0.80007	0.05600	0.09951	0.22998	0.03835

	Pb	Se
	calc	calc
#1	0.97376	0.99121
#2	0.98366	1.01283
Mean	0.97871	1.00202
%RSD	0.71570	1.52560

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:15

SampleId1 : CCB

SampleId2 :

[CB]

Analysis commenced : 3/11/2013 17:57:29

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00059	0.06043	0.00279	-0.00561	0.00095	0.00018	0.00408	0.01552	0.00032
#2	-0.00060	0.06201	0.00022	-0.00733	0.00073	0.00015	-0.00381	0.01474	-0.00007
Mean	-0.00001	0.06122	0.00151	-0.00647	0.00084	0.00016	0.00014	0.01513	0.00012
%RSD	8643.11715	1.82453	120.35537	18.76570	18.36525	13.73211	4034.38729	3.64914	224.81681

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00007	0.00022	0.00009	0.05221	-0.05983	-0.00231	0.04138	0.00097	-0.00052
#2	-0.00074	0.00016	-0.00035	0.05198	-0.07276	-0.00232	0.03770	0.00085	0.00067
Mean	-0.00041	0.00019	-0.00013	0.05210	-0.06630	-0.00232	0.03954	0.00091	0.00008
%RSD	117.90010	23.14630	245.64179	0.31719	13.78986	0.47805	6.58311	9.24492	1113.82523

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05253	-0.00070	-0.00721	0.00236	-0.00026	-0.00289	-0.00149	0.00391	0.00556
#2	0.05225	-0.00179	-0.00128	-0.00268	0.00237	-0.01035	-0.00201	0.00856	0.00477
Mean	0.05239	-0.00125	-0.00424	-0.00016	0.00106	-0.00662	-0.00175	0.00623	0.00517
%RSD	0.38673	62.13787	98.90069	2229.17882	176.39422	79.72582	20.99978	52.73999	10.84727

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01478	-0.00538	-0.00287	-0.00179	0.00818	-0.00869	0.00115	-0.00024	0.00129
#2	0.01295	-0.00282	-0.00294	-0.00225	0.00781	-0.03261	0.00029	-0.00024	0.00052
Mean	0.01386	-0.00410	-0.00290	-0.00202	0.00800	-0.02065	0.00072	-0.00024	0.00090
%RSD	9.30813	44.12821	1.60177	16.04576	3.25423	81.92245	83.90426	0.00000	60.55867

	Pb	Seser: STEVE WORKMAN
	calc	calc
#1	0.00061	0.00501
#2	0.00069	0.00603
Mean	0.00065	0.00552
%RSD	8.66056	13.06102

Method : Paragon2 File : 130311A
SampleId1 : 1303058-8 5X **SampleId2 :**
Analysis commenced : 3/11/2013 17:59:20
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:16
[SAMPLE]
Position : TUBE81

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00036	11.17740	0.01153	-0.00316	0.22367	0.00065	0.00791	19.48156	-0.00035
#2	-0.00082	11.18689	0.00920	-0.00414	0.22375	0.00062	-0.00506	19.45403	-0.00060
Mean	-0.00023	11.18214	0.01036	-0.00365	0.22371	0.00063	0.00142	19.46780	-0.00048
%RSD	363.13359	0.06001	15.90328	19.01261	0.02309	2.91330	644.03572	0.09997	36.48717

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00806	0.00941	0.00784	24.48522	2.44042	0.00972	4.03595	0.34427	-0.00046
#2	0.00788	0.00793	0.00788	24.46307	2.43688	0.00970	4.01352	0.34444	-0.00216
Mean	0.00797	0.00867	0.00786	24.47414	2.43865	0.00971	4.02473	0.34435	-0.00131
%RSD	1.61483	12.06074	0.35101	0.06398	0.10260	0.19010	0.39415	0.03663	91.81520

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05720	0.01079	0.44239	0.01946	0.01642	1.34061	0.00246	0.03210	0.03240
#2	0.05646	0.01011	0.46205	0.01590	0.01729	1.31820	0.00036	0.03041	0.03759
Mean	0.05683	0.01045	0.45222	0.01768	0.01686	1.32941	0.00141	0.03126	0.03499
%RSD	0.91679	4.59929	3.07418	14.27348	3.65966	1.19158	105.27694	3.81656	10.49666

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.97999	-0.00214	0.05675	0.04242	0.00044	0.15890	0.15410	0.05686	0.00514
#2	1.98752	-0.00361	0.05677	0.04305	0.00029	0.11881	0.15272	0.05583	0.00470
Mean	1.98375	-0.00288	0.05676	0.04274	0.00036	0.13886	0.15341	0.05635	0.00492
%RSD	0.26857	35.99666	0.02342	1.03634	29.82618	20.41462	0.63493	1.29135	6.42886

	Pb	Se
	calc	calc
#1	0.01743	0.03230
#2	0.01683	0.03520
Mean	0.01713	0.03375
%RSD	2.50400	6.08226

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:16

SampleId1 : 1303058-9 5X SampleId2 :
 Analysis commenced : 3/11/2013 18:01:06
 Dilution ratio : 1.00000 to 1.00000 Tray :

[SAMPLE]
 Position : TUBE82

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00018	5.25870	0.02866	-0.00475	0.10060	0.00217	-0.00227	64.88968	-0.00038
#2	-0.00144	5.28209	0.02913	-0.00506	0.10093	0.00218	0.00298	65.07856	-0.00084
Mean	-0.00063	5.27039	0.02890	-0.00491	0.10076	0.00218	0.00036	64.98412	-0.00061
%RSD	181.20963	0.31392	1.14082	4.41907	0.23051	0.35591	1044.06287	0.20552	52.56894
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00398	0.00226	0.00240	13.99144	0.93738	0.00283	1.57325	1.19081	0.04995
#2	0.00312	0.00159	0.00194	14.05483	0.93150	0.00282	1.56864	1.19710	0.04907
Mean	0.00355	0.00192	0.00217	14.02314	0.93444	0.00282	1.57094	1.19396	0.04951
%RSD	17.06405	24.62120	15.04666	0.31965	0.44535	0.39228	0.20726	0.37234	1.25681
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.04066	0.00357	0.27715	0.04806	0.04295	4.00912	0.00100	0.04303	0.04706
#2	0.04062	0.00176	0.28172	0.04400	0.04630	4.03531	0.00035	0.04206	0.04954
Mean	0.04064	0.00267	0.27943	0.04603	0.04462	4.02221	0.00068	0.04255	0.04830
%RSD	0.07120	48.26398	1.15642	6.22876	5.30369	0.46038	68.41918	1.61312	3.62663
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.50189	0.00007	0.10474	0.03025	-0.00415	4.87641	0.19301	0.08876	0.00694
#2	2.51556	-0.00030	0.10521	0.02985	0.00387	4.86734	0.19394	0.08790	0.00663
Mean	2.50873	-0.00012	0.10497	0.03005	-0.00014	4.87188	0.19347	0.08833	0.00679
%RSD	0.38535	219.98043	0.31668	0.93472	4131.36459	0.13165	0.33980	0.68653	3.22768
	Pb calc	Se calc							
#1	0.04465	0.04572							
#2	0.04553	0.04705							
Mean	0.04509	0.04638							
%RSD	1.38359	2.02609							

Method : Paragon2 File : 130311A
 SampleId1 : 1303058-10 5X SampleId2 :
 Analysis commenced : 3/11/2013 18:02:52
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:16
 [SAMPLE]
 Position : TUBE83

Final concentrations

Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
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#1	0.00220	3.75718	0.02808	-0.00359	0.06469	0.00221	0.00971	72.26376	0.00023
#2	-0.00046	3.75368	0.02855	-0.00549	0.06392	0.00219	-0.00116	72.00985	-0.00045
Mean	0.00087	3.75543	0.02831	-0.00454	0.06431	0.00220	0.00428	72.13681	-0.00011
%RSD	215.97136	0.06585	1.16430	29.61951	0.84261	0.59931	179.76116	0.24889	432.56455

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00436	0.00261	0.00346	13.73438	0.60647	0.00147	1.13156	1.30229	0.07302
#2	0.00332	0.00094	0.00192	13.69414	0.60741	0.00147	1.10762	1.29845	0.07082
Mean	0.00384	0.00177	0.00269	13.71426	0.60694	0.00147	1.11959	1.30037	0.07192
%RSD	19.17266	66.88255	40.53172	0.20748	0.10965	0.12559	1.51193	0.20855	2.16311

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03207	0.00439	0.26778	0.05784	0.03602	5.62246	0.00627	0.08378	0.04948
#2	0.03227	0.00235	0.25087	0.04736	0.04240	5.61871	-0.00084	0.06696	0.06269
Mean	0.03217	0.00337	0.25932	0.05260	0.03921	5.62059	0.00272	0.07537	0.05609
%RSD	0.44970	42.81261	4.61026	14.08460	11.49891	0.04712	185.04692	15.78511	16.65648

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.80348	0.00483	0.11205	0.01933	0.00666	5.23753	0.20015	0.06441	0.00962
#2	1.80674	0.00410	0.11097	0.01969	-0.00126	5.17801	0.19765	0.06406	0.00865
Mean	1.80511	0.00447	0.11151	0.01951	0.00270	5.20777	0.19890	0.06423	0.00913
%RSD	0.12769	11.58670	0.68570	1.30117	207.46243	0.80823	0.88802	0.37760	7.52536

	Pb	Se
	calc	calc
#1	0.04329	0.06090
#2	0.04405	0.06411
Mean	0.04367	0.06251
%RSD	1.23672	3.63039

Method : Paragon2 File : 130311A
SampleId1 : 1303058-11 5X SampleId2 :
Analysis commenced : 3/11/2013 18:04:38
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:16
[SAMPLE]

Position : TUBE84

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00059	13.21256	0.01713	-0.00573	0.41413	0.00051	-0.00121	16.05569	-0.00075
#2	-0.00041	13.19480	0.02051	-0.00500	0.41508	0.00051	0.00247	16.08804	-0.00039
Mean	-0.00050	13.20368	0.01882	-0.00537	0.41460	0.00051	0.00063	16.07187	-0.00057
%RSD	26.05563	0.09509	12.70300	9.69677	0.16212	0.46712	415.18395	0.14233	45.78294

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00596	0.00869	0.00784	26.72939	1.91053	0.00987	3.89182	0.43998	-0.00065

#2	0.00596	0.00898	0.00756	26.84154	1.91454	0.00991	3.89336	0.44183	-0.00222
Mean	0.00596	0.00883	0.00770	26.78546	1.91253	0.00989	3.89259	0.44091	-0.00143
%RSD	0.00214	2.30884	2.61065	0.29605	0.14816	0.29870	0.02791	0.29588	77.55465

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.04328	0.00903	0.44856	0.01391	0.01587	1.28834	0.00009	0.03036	0.03108
#2	0.04320	0.00940	0.44284	0.01560	0.01351	1.29207	-0.00098	0.02239	0.02052
Mean	0.04324	0.00922	0.44570	0.01476	0.01469	1.29020	-0.00044	0.02637	0.02580
%RSD	0.13385	2.85800	0.90671	8.06356	11.35620	0.20462	171.26517	21.36515	28.92062

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.41930	0.00224	0.04828	0.04879	0.00084	0.05956	0.08656	0.04537	0.00445
#2	2.41620	0.00077	0.04831	0.04951	0.00185	0.06148	0.08704	0.04623	0.00465
Mean	2.41775	0.00151	0.04829	0.04915	0.00134	0.06052	0.08680	0.04580	0.00455
%RSD	0.09059	68.71962	0.04128	1.03307	53.20300	2.24303	0.39083	1.32389	3.09054

	Pb	Se
	calc	calc
#1	0.01522	0.03084
#2	0.01420	0.02115
Mean	0.01471	0.02599
%RSD	4.86929	26.36769

Method : Paragon2 File : 130311A
SampleId1 : 1303058-12 5X SampleId2 :
Analysis commenced : 3/11/2013 18:06:24
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:16
[SAMPLE]
Position : TUBE85

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00006	7.32682	0.00710	-0.00592	0.14261	0.00018	-0.00355	12.75413	-0.00032
#2	-0.00045	7.30425	0.00582	-0.00629	0.14214	0.00017	0.00188	12.72302	-0.00024
Mean	-0.00019	7.31553	0.00646	-0.00610	0.14238	0.00017	-0.00083	12.73857	-0.00028
%RSD	187.19904	0.21815	14.03355	4.26369	0.23570	1.99683	461.55485	0.17267	20.41780

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00644	0.00423	0.00498	19.76070	1.06663	0.00698	3.65951	0.28327	-0.00153
#2	0.00616	0.00456	0.00564	19.72375	1.07276	0.00698	3.65306	0.28249	-0.00040
Mean	0.00630	0.00439	0.00531	19.74222	1.06969	0.00698	3.65629	0.28288	-0.00096
%RSD	3.06215	5.27768	8.76429	0.13233	0.40468	0.07933	0.12479	0.19315	83.22271

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02822	0.00647	0.51166	0.01622	0.01188	0.37764	-0.00143	0.00323	0.00664
#2	0.02904	0.00754	0.50823	0.01670	0.01260	0.37017	0.00200	0.00488	0.00470

Mean	0.02863	0.00700	0.50995	0.01646	0.01224	0.37390	0.00029	0.00405	0.00567
%RSD	2.02106	10.84106	0.47557	2.06194	4.19209	1.41122	838.84101	28.76992	24.24550
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.93892	-0.00506	0.03856	0.03006	-0.00168	-0.00061	0.02101	0.04520	0.00261
#2	0.93901	-0.00213	0.03839	0.03052	-0.00218	0.00004	0.02069	0.04606	0.00269
Mean	0.93896	-0.00359	0.03847	0.03029	-0.00193	-0.00029	0.02085	0.04563	0.00265
%RSD	0.00728	57.58416	0.32814	1.08778	18.17587	160.70597	1.09433	1.32887	2.11293
	Pb	Se							
	calc	calc							
#1	0.01332	0.00550							
#2	0.01397	0.00476							
Mean	0.01364	0.00513							
%RSD	3.33652	10.29453							

Method : Paragon2 File : 130311A
SampleId1 : 1303058-13 5X SampleId2 :
Analysis commenced : 3/11/2013 18:08:10
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:16

[SAMPLE]

Position : TUBE86

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00056	11.35191	0.01736	-0.00512	0.15054	0.00060	0.00717	24.24144	-0.00016
#2	-0.00116	11.38227	0.01083	-0.00414	0.15090	0.00061	0.00087	24.25496	-0.00010
Mean	-0.00086	11.36709	0.01409	-0.00463	0.15072	0.00061	0.00402	24.24820	-0.00013
%RSD	49.29417	0.18888	32.74554	14.98379	0.17128	0.74180	110.90009	0.03943	32.00539
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00845	0.00808	0.00638	26.52717	2.28780	0.01000	4.24863	0.32286	-0.00197
#2	0.00854	0.00770	0.00686	26.54828	2.30809	0.01003	4.24555	0.32351	-0.00084
Mean	0.00849	0.00789	0.00662	26.53773	2.29794	0.01002	4.24709	0.32319	-0.00140
%RSD	0.75570	3.40146	5.12612	0.05623	0.62416	0.22110	0.05117	0.14310	57.09169
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05806	0.01019	0.41038	0.01761	0.01742	0.38137	0.00036	-0.00363	-0.00049
#2	0.05839	0.01107	0.41267	0.01920	0.01473	0.38883	0.00129	0.00117	0.00198
Mean	0.05822	0.01063	0.41153	0.01840	0.01607	0.38510	0.00083	-0.00123	0.00075
%RSD	0.39773	5.83059	0.39276	6.10547	11.84570	1.37021	80.03301	275.99326	233.01912
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.29326	0.00114	0.08694	0.04712	-0.00195	0.01109	0.02071	0.05823	0.00483
#2	2.30319	0.00261	0.08688	0.04720	-0.00028	0.00139	0.02012	0.05857	0.00486
Mean	2.29823	0.00187	0.08691	0.04716	-0.00111	0.00624	0.02042	0.05840	0.00484

%RSD	0.30569	55.19024	0.05354	0.11453	106.31969	109.90634	2.06797	0.41529	0.40719
	Pb	Se							
	calc	calc							
#1	0.01748	-0.00153							
#2	0.01622	0.00171							
Mean	0.01685	0.00009							
%RSD	5.31638	2542.23883							

Method : Paragon2 File : 130311A Printed : 3/12/2013 13:06:17
SampleId1 : 1303058-14 5X **SampleId2 :**
Analysis commenced : 3/11/2013 18:09:56 **[SAMPLE]**
Dilution ratio : 1.00000 to 1.00000 Tray : Position : TUBE87

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00173	8.92145	0.00978	-0.00408	0.11929	0.00042	0.00780	3.10800	0.00002
#2	-0.00120	8.99793	0.01060	-0.00567	0.11969	0.00041	-0.00238	3.11334	0.00037
Mean	0.00026	8.95969	0.01019	-0.00488	0.11949	0.00041	0.00271	3.11067	0.00019
%RSD	783.33886	0.60363	5.66165	23.12367	0.23761	1.99081	265.62250	0.12119	125.26718

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01077	0.01171	0.01718	22.16696	2.37177	0.00538	2.97626	0.50618	0.00099
#2	0.00897	0.01044	0.01564	22.26651	2.37437	0.00540	2.96029	0.50821	-0.00178
Mean	0.00987	0.01107	0.01641	22.21674	2.37307	0.00539	2.96827	0.50719	-0.00040
%RSD	12.94641	8.13827	6.65685	0.31685	0.07732	0.27373	0.38051	0.28225	494.34106

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.06858	0.01353	0.62577	0.02943	0.01211	0.62764	0.00784	0.00987	0.00288
#2	0.06862	0.01188	0.61800	0.02217	0.01901	0.66496	-0.00376	0.00226	0.00166
Mean	0.06860	0.01270	0.62189	0.02580	0.01556	0.64630	0.00204	0.00606	0.00227
%RSD	0.04220	9.14991	0.88422	19.88177	31.36223	4.08295	402.88187	88.78948	37.88615

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.42632	0.00513	0.03982	0.07961	0.00816	0.04486	0.03107	0.05789	0.00803
#2	2.43809	0.00257	0.03990	0.07955	0.00246	-0.01271	0.03011	0.05686	0.00689
Mean	2.43221	0.00385	0.03986	0.07958	0.00531	0.01608	0.03059	0.05737	0.00746
%RSD	0.34222	47.04281	0.13336	0.06108	75.94731	253.19369	2.20343	1.26819	10.81943

	Pb	Se
	calc	calc
#1	0.01787	0.00521
#2	0.02006	0.00186
Mean	0.01897	0.00353
%RSD	8.15252	66.97201

ted: 3/12/2013 13:06:31 User: STEVE WORKMAN
 Method : Paragon2 File : 130311A
 SampleId1 : 1303059-5 5X SampleId2 :
 Analysis commenced : 3/11/2013 18:11:42
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:17
 [SAMPLE]
 Position : TUBE88

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00078	3.52348	0.01305	-0.00678	0.07144	0.00009	-0.00038	12.77920	-0.00074
#2	-0.00079	3.54060	0.01258	-0.00770	0.07166	0.00008	0.00190	12.81730	-0.00058
Mean	-0.00078	3.53204	0.01281	-0.00724	0.07155	0.00008	0.00076	12.79825	-0.00066
%RSD	0.59515	0.34269	2.57302	8.98817	0.21638	7.33988	211.60860	0.21046	17.47239
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00159	0.00134	0.00284	6.68378	0.66271	-0.00031	1.26568	0.16552	0.00840
#2	0.00222	0.00147	0.00293	6.71216	0.66294	-0.00032	1.26691	0.16653	0.00790
Mean	0.00190	0.00141	0.00289	6.69797	0.66283	-0.00031	1.26630	0.16602	0.00815
%RSD	23.52422	6.48485	2.09068	0.29956	0.02510	3.52114	0.06856	0.42994	4.36132
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.10573	0.00257	0.22848	0.01008	0.01018	0.73587	-0.00093	0.04315	0.04572
#2	0.10777	0.00167	0.23419	0.01330	0.00918	0.74707	-0.00173	0.04329	0.05347
Mean	0.10675	0.00212	0.23134	0.01169	0.00968	0.74147	-0.00133	0.04322	0.04959
%RSD	1.35675	30.01122	1.74582	19.48535	7.25918	1.06775	42.37590	0.23887	11.06082
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	1.18036	-0.00213	0.01539	0.03280	0.00252	0.06900	0.14533	0.01725	0.00296
#2	1.19034	-0.00177	0.01546	0.03298	0.00564	0.07805	0.14582	0.01776	0.00303
Mean	1.18535	-0.00195	0.01543	0.03289	0.00408	0.07353	0.14558	0.01750	0.00300
%RSD	0.59548	13.25863	0.30147	0.39413	54.05931	8.70143	0.23913	2.07814	1.59245
	Pb calc	Se calc							
#1	0.01014	0.04486							
#2	0.01055	0.05008							
Mean	0.01035	0.04747							
%RSD	2.80188	7.77983							

Method : Paragon2 File : 130311A
 SampleId1 : 1303059-7 5X SampleId2 :
 Analysis commenced : 3/11/2013 18:13:28
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:17
 [SAMPLE]
 Position : TUBE89

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00053	4.95353	0.01246	-0.00678	0.07651	0.00027	0.00018	9.99393	-0.00050
#2	0.00108	4.95230	0.02214	-0.00481	0.07618	0.00028	-0.00016	10.03268	0.00020
Mean	0.00027	4.95291	0.01730	-0.00580	0.07635	0.00027	0.00001	10.01330	-0.00015
%RSD	419.11845	0.01750	39.54129	23.94277	0.30418	3.01840	2593.46486	0.27366	325.46302
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00277	0.00197	0.00425	9.74455	1.30071	0.00117	2.22505	0.24862	0.03468
#2	0.00367	0.00348	0.00507	9.78021	1.32686	0.00122	2.23487	0.24963	0.03480
Mean	0.00322	0.00272	0.00466	9.76238	1.31379	0.00120	2.22996	0.24912	0.03474
%RSD	19.83882	39.23217	12.51053	0.25828	1.40715	3.08436	0.31158	0.28672	0.25588
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.02855	0.00283	0.40810	0.02302	0.01764	1.80367	-0.00092	0.07253	0.06637
#2	0.02994	0.00368	0.40787	0.02819	0.01451	1.85596	0.00472	0.07131	0.06726
Mean	0.02925	0.00326	0.40798	0.02561	0.01607	1.82982	0.00190	0.07192	0.06682
%RSD	3.36373	18.55776	0.03962	14.29339	13.75466	2.02073	210.24127	1.19399	0.93812
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.07279	0.00518	0.01832	0.03309	0.00592	0.17644	0.14790	0.02411	0.00430
#2	2.07977	-0.00104	0.01832	0.03332	0.00714	0.20036	0.14916	0.02531	0.00523
Mean	2.07628	0.00207	0.01832	0.03320	0.00653	0.18840	0.14853	0.02471	0.00476
%RSD	0.23767	212.05611	0.00000	0.48802	13.21226	8.97768	0.60246	3.43555	13.65767
	Pb calc	Se calc							
#1	0.01943	0.06842							
#2	0.01907	0.06861							
Mean	0.01925	0.06852							
%RSD	1.32932	0.19287							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-9 5X SampleId2 :
Analysis commenced : 3/11/2013 18:15:15
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:17

[SAMPLE]

Position : TUBE90

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00025	3.34749	0.01013	-0.00641	0.06411	-0.00001	-0.00633	8.41299	-0.00076
#2	-0.00077	3.32907	0.01118	-0.00647	0.06352	-0.00003	0.00208	8.37179	-0.00021
Mean	-0.00051	3.33828	0.01066	-0.00644	0.06381	-0.00002	-0.00213	8.39239	-0.00048
%RSD	71.77881	0.39017	6.96078	0.67339	0.64694	45.78645	279.70777	0.34713	81.54386
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo

	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00143	0.00069	0.00135	7.08110	0.80462	-0.00014	1.35346	0.15756	0.01262
#2	0.00165	0.00156	0.00153	7.04295	0.81874	-0.00013	1.34763	0.15691	0.01274
Mean	0.00154	0.00113	0.00144	7.06203	0.81168	-0.00014	1.35055	0.15724	0.01268
%RSD	10.32060	54.14890	8.73520	0.38199	1.23028	6.80031	0.30534	0.29373	0.70113

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.02524	0.00094	0.28834	0.00479	0.00712	0.50077	0.00135	0.01606	0.02375
#2	0.02544	0.00116	0.30320	0.00892	0.00778	0.47838	-0.00078	0.02185	0.02445
Mean	0.02534	0.00105	0.29577	0.00685	0.00745	0.48957	0.00028	0.01896	0.02410
%RSD	0.57092	14.70022	3.55094	42.61334	6.26762	3.23366	528.68276	21.56968	2.04916

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	1.86733	-0.00324	0.01572	0.03747	-0.00196	0.05729	0.10330	0.01622	0.00153
#2	1.86264	-0.00104	0.01559	0.03750	0.00459	0.06829	0.10226	0.01759	0.00189
Mean	1.86498	-0.00214	0.01566	0.03748	0.00132	0.06279	0.10278	0.01690	0.00171
%RSD	0.17788	72.58873	0.59408	0.05764	351.25892	12.38730	0.71531	5.73844	14.81333

	Pb calc	Se calc
#1	0.00634	0.02119
#2	0.00816	0.02359
Mean	0.00725	0.02239
%RSD	17.71126	7.55241

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 18:17:01
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:17
[CV]

Position : STD1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.19147	49.58179	0.51012	0.96284	0.98412	0.48772	0.49865	49.33545	0.49076
#2	0.19113	49.36744	0.49672	0.95616	0.97932	0.48720	0.49424	49.18399	0.48726
Mean	0.19130	49.47461	0.50342	0.95950	0.98172	0.48746	0.49645	49.25972	0.48901
%RSD	0.12708	0.30636	1.88158	0.49246	0.34604	0.07450	0.62866	0.21742	0.50622

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.47888	0.96893	0.98218	19.63460	48.21939	0.51040	49.15156	0.95961	0.95393
#2	0.47671	0.96663	0.97808	19.60829	48.00498	0.50868	49.02987	0.95848	0.95380
Mean	0.47780	0.96778	0.98013	19.62145	48.11219	0.50954	49.09072	0.95905	0.95386
%RSD	0.32207	0.16823	0.29642	0.09483	0.31511	0.23878	0.17528	0.08372	0.00934

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
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#1	47.76634	0.94928	4.76366	0.97135	0.93173	5.10568	0.47058	0.99066	0.94167
#2	47.59881	0.94103	4.75810	0.96059	0.95908	5.06450	0.46413	0.98898	0.98590
Mean	47.68258	0.94515	4.76088	0.96597	0.94540	5.08509	0.46735	0.98982	0.96378
%RSD	0.24843	0.61655	0.08249	0.78774	2.04586	0.57268	0.97616	0.11979	3.24546

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.87498	1.00988	0.47934	0.49809	0.50379	4.79127	0.47944	0.98630	0.95232
#2	4.85785	0.99854	0.47655	0.49776	0.50389	4.76863	0.47689	0.98268	0.94902
Mean	4.86641	1.00421	0.47795	0.49793	0.50384	4.77995	0.47816	0.98449	0.95067
%RSD	0.24893	0.79901	0.41315	0.04767	0.01410	0.33495	0.37726	0.25967	0.24574

	Pb	Se
	calc	calc
#1	0.94492	0.95798
#2	0.95958	0.98693
Mean	0.95225	0.97245
%RSD	1.08868	2.10482

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:18

SampleId1 : CCB

SampleId2 :

[CB]

Analysis commenced : 3/11/2013 18:18:52

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00065	-0.00474	-0.00082	-0.00708	-0.00054	-0.00030	-0.00433	-0.06850	-0.00062
#2	-0.00052	-0.00327	-0.00013	-0.00788	-0.00065	-0.00036	-0.00240	-0.06882	-0.00064
Mean	-0.00059	-0.00401	-0.00047	-0.00748	-0.00060	-0.00033	-0.00337	-0.06866	-0.00063
%RSD	15.75479	26.05646	104.12268	7.53436	12.93605	13.12535	40.47898	0.32168	2.17985

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00079	-0.00039	-0.00111	0.00657	-0.12377	-0.00270	-0.02181	-0.00052	-0.00071
#2	-0.00056	-0.00068	-0.00131	0.00556	-0.12142	-0.00270	-0.02242	-0.00052	-0.00134
Mean	-0.00068	-0.00054	-0.00121	0.00607	-0.12260	-0.00270	-0.02212	-0.00052	-0.00102
%RSD	23.59849	39.40330	11.75211	11.80275	1.35576	0.13671	1.96134	0.00000	43.39725

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01419	-0.00162	-0.01612	-0.00372	0.00013	-0.02154	-0.00175	0.00183	0.00256
#2	0.01288	-0.00182	-0.00927	-0.00212	-0.00267	-0.02527	0.00036	0.00445	0.00177
Mean	0.01354	-0.00172	-0.01269	-0.00292	-0.00127	-0.02340	-0.00069	0.00314	0.00216
%RSD	6.83920	8.11748	38.16010	38.81633	155.61701	11.27062	216.16323	59.08742	25.91921

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00538	0.00340	-0.00403	-0.00281	-0.00342	-0.03002	-0.00054	-0.00264	-0.00016

#2	0.00256	-0.00136	-0.00402	-0.00295	0.00470	-0.01709	0.00000	-0.00179	-0.00012
Mean	0.00397	0.00102	-0.00403	-0.00288	0.00064	-0.02355	-0.00027	-0.00221	-0.00014
%RSD	50.21697	330.21368	0.33002	3.56454	894.85752	38.82769	141.47326	27.36830	20.80190
	Pb	Se							
	calc	calc							
#1	-0.00115	0.00232							
#2	-0.00249	0.00266							
Mean	-0.00182	0.00249							
%RSD	51.79556	9.79165							

Method : Paragon2 File : 130311A
SampleId1 : 1303059-11 5X SampleId2 :
Analysis commenced : 3/11/2013 18:20:43
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:18

[SAMPLE]

Position : TUBE91

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00033	3.16402	0.01689	-0.00531	0.05309	0.00003	0.00616	9.23017	-0.00065
#2	-0.00059	3.18498	0.01794	-0.00629	0.05341	0.00001	0.00248	9.25593	-0.00048
Mean	-0.00013	3.17450	0.01742	-0.00580	0.05325	0.00002	0.00432	9.24305	-0.00057
%RSD	489.66389	0.46686	4.25891	11.97138	0.43607	59.80545	60.21466	0.19705	20.81802

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00203	0.00176	0.00246	7.31284	0.56411	-0.00028	1.35838	0.16106	0.01683
#2	0.00136	0.00094	0.00247	7.34829	0.55729	-0.00030	1.36329	0.16207	0.01689
Mean	0.00170	0.00135	0.00246	7.33057	0.56070	-0.00029	1.36083	0.16157	0.01686
%RSD	28.27037	42.98752	0.39759	0.34193	0.86050	5.78591	0.25519	0.44178	0.26365

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.02511	0.00257	0.29657	0.01826	0.00936	0.84784	-0.00049	0.05113	0.05233
#2	0.02524	0.00165	0.28194	0.01215	0.01164	0.86650	-0.00206	0.04424	0.05049
Mean	0.02518	0.00211	0.28926	0.01520	0.01050	0.85717	-0.00128	0.04769	0.05141
%RSD	0.34478	30.90316	3.57496	28.43721	15.33551	1.53950	86.79784	10.20956	2.53684

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.76808	0.00149	0.01256	0.06468	0.00479	0.07988	0.13949	0.01810	0.00388
#2	1.77540	0.00002	0.01263	0.06494	-0.00272	0.06565	0.13970	0.01742	0.00378
Mean	1.77174	0.00076	0.01259	0.06481	0.00103	0.07277	0.13960	0.01776	0.00383
%RSD	0.29192	136.77076	0.42202	0.28333	513.93044	13.83077	0.10555	2.73073	1.85260

	Pb	Se							
	calc	calc							
#1	0.01232	0.05193							
#2	0.01181	0.04841							

Mean 0.01207 0.05017ser: STEVE WORKMAN
%RSD 3.03118 4.96531

Method : Paragon2 File : 130311A
SampleId1 : 1303059-12 5X SampleId2 :
Analysis commenced : 3/11/2013 18:22:30
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:18

[SAMPLE]

Position : TUBE92

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00007	5.72469	-0.00059	-0.00555	0.09429	0.00006	0.00525	2.36727	-0.00039
#2	-0.00026	5.74978	0.00454	-0.00543	0.09403	0.00007	-0.00263	2.37385	-0.00042
Mean	-0.00017	5.73723	0.00197	-0.00549	0.09416	0.00006	0.00131	2.37056	-0.00040
%RSD	78.30900	0.30922	183.82329	1.58002	0.19186	14.56494	425.07495	0.19627	6.15462

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00279	0.00412	0.00565	9.28913	1.04215	0.00077	1.65030	0.23091	-0.00222
#2	0.00261	0.00379	0.00566	9.30962	1.04168	0.00075	1.65705	0.23151	-0.00153
Mean	0.00270	0.00396	0.00565	9.29938	1.04191	0.00076	1.65367	0.23121	-0.00187
%RSD	4.74998	5.82861	0.03941	0.15581	0.03196	1.94721	0.28878	0.18170	26.10664

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.05090	0.00443	0.34867	0.00854	0.00677	0.17990	0.00200	0.00253	0.00270
#2	0.05090	0.00338	0.35393	0.01116	0.00672	0.17244	-0.00023	-0.00022	0.00094
Mean	0.05090	0.00390	0.35130	0.00985	0.00674	0.17617	0.00088	0.00116	0.00182
%RSD	0.00000	19.05715	1.05804	18.86185	0.56704	2.99475	178.58431	168.06126	68.25108

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.53196	0.00077	0.01081	0.05362	0.00384	-0.01036	0.01314	0.02376	0.00358
#2	2.54385	0.00296	0.01080	0.05383	-0.00331	-0.01360	0.01291	0.02513	0.00346
Mean	2.53790	0.00187	0.01080	0.05373	0.00027	-0.01198	0.01303	0.02445	0.00352
%RSD	0.33131	83.11992	0.06149	0.27144	1895.99738	19.10901	1.22045	3.96765	2.43046

	Pb calc	Se calc
#1	0.00736	0.00264
#2	0.00820	0.00056
Mean	0.00778	0.00160
%RSD	7.62610	92.29173

Method : Paragon2 File : 130311A
SampleId1 : 1303059-13 5X SampleId2 :
Analysis commenced : 3/11/2013 18:24:16
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:18

[SAMPLE]

Position : TUBE93

Final concentrations6:31 User: STEVE WORKMAN

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00006	12.88000	0.01153	-0.00420	0.17741	0.00072	0.00090	36.33068	-0.00070
#2	-0.00073	12.90097	0.01456	-0.00383	0.17744	0.00072	-0.00139	36.34880	-0.00050
Mean	-0.00040	12.89049	0.01305	-0.00402	0.17743	0.00072	-0.00025	36.33974	-0.00060
%RSD	120.04714	0.11504	16.42580	6.47669	0.01455	0.61428	656.80792	0.03526	23.11302

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00929	0.01177	0.01485	29.64146	3.12818	0.01229	13.10756	0.40839	-0.00140
#2	0.00920	0.01198	0.01488	29.68452	3.12062	0.01230	13.11003	0.40964	-0.00184
Mean	0.00925	0.01187	0.01487	29.66299	3.12440	0.01230	13.10880	0.40901	-0.00162
%RSD	0.69279	1.29535	0.16770	0.10265	0.17101	0.04503	0.01332	0.21601	19.18965

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.11560	0.01484	0.99101	0.02167	0.01888	0.52316	0.00031	0.00682	0.00097
#2	0.11576	0.01539	0.98322	0.02045	0.01847	0.54555	-0.00273	0.00129	0.00301
Mean	0.11568	0.01511	0.98711	0.02106	0.01867	0.53435	-0.00121	0.00406	0.00199
%RSD	0.10017	2.56346	0.55764	4.11148	1.55019	2.96278	176.99126	96.36417	72.22827

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	3.15026	0.00151	0.08686	0.04834	-0.00671	0.02217	0.02782	0.08173	0.00609
#2	3.16295	0.00041	0.08679	0.04847	-0.00098	-0.01405	0.02697	0.08173	0.00591
Mean	3.15661	0.00096	0.08682	0.04840	-0.00384	0.00406	0.02739	0.08173	0.00600
%RSD	0.28434	80.95864	0.05360	0.18971	105.43531	630.66558	2.19783	0.00000	2.13147

	Pb calc	Se calc
#1	0.01981	0.00292
#2	0.01913	0.00244
Mean	0.01947	0.00268
%RSD	2.47289	12.82423

Method : Paragon2 File : 130311A
SampleId1 : 1303059-14 5X SampleId2 :
Analysis commenced : 3/11/2013 18:26:02
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:18
[SAMPLE]
Position : TUBE94

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00011	1.81666	0.00104	-0.00923	0.05082	-0.00028	-0.00145	0.49456	-0.00051
#2	-0.00071	1.81502	-0.00374	-0.00948	0.05068	-0.00031	-0.00040	0.49206	-0.00063
Mean	-0.00041	1.81584	-0.00135	-0.00935	0.05075	-0.00029	-0.00092	0.49331	-0.00057
%RSD	103.59130	0.06397	250.47247	1.85463	0.20335	7.70007	80.37658	0.35844	13.96262

ted: 3/12/2013 13:06:31 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00046	0.00014	-0.00056	4.60826	0.11885	-0.00193	0.45063	0.07624	-0.00253
#2	0.00041	-0.00016	-0.00084	4.60339	0.10498	-0.00194	0.45063	0.07606	-0.00165
Mean	0.00043	-0.00001	-0.00070	4.60582	0.11192	-0.00193	0.45063	0.07615	-0.00209
%RSD	7.36549	2386.88446	28.11866	0.07485	8.76547	0.66800	0.00000	0.16529	29.73369

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01619	-0.00039	0.09577	0.00109	0.00095	0.01949	-0.00058	-0.01327	0.00020
#2	0.01579	-0.00037	0.08960	-0.00175	0.00005	0.01203	-0.00083	-0.00187	0.00320
Mean	0.01599	-0.00038	0.09269	-0.00033	0.00050	0.01576	-0.00070	-0.00757	0.00170
%RSD	1.80921	4.06425	4.70409	609.51685	126.78251	33.46353	25.50166	106.45363	124.60914

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.31817	-0.00068	0.00019	0.03987	-0.00563	-0.01404	0.00533	0.00713	0.00150
#2	1.32678	-0.00141	0.00015	0.03979	-0.00313	-0.01921	0.00525	0.00610	0.00144
Mean	1.32248	-0.00104	0.00017	0.03983	-0.00438	-0.01663	0.00529	0.00662	0.00147
%RSD	0.46032	49.57854	19.65666	0.13562	40.37501	21.99870	1.15691	10.99666	2.93531

	Pb	Se
	calc	calc
#1	0.00100	-0.00428
#2	-0.00055	0.00151
Mean	0.00022	-0.00139
%RSD	489.19607	295.02015

Method : Paragon2 File : 130311A

SampleId1 : 1303060-9 5X SampleId2 :

Analysis commenced : 3/11/2013 18:27:49

Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:18

[SAMPLE]

Position : TUBE95

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00091	8.31348	0.00908	-0.00776	0.44089	0.00052	0.00057	11.44201	-0.00068
#2	-0.00035	8.34430	0.00302	-0.00635	0.44170	0.00050	0.00564	11.44803	-0.00003
Mean	-0.00063	8.32889	0.00605	-0.00705	0.44130	0.00051	0.00311	11.44502	-0.00036
%RSD	62.46363	0.26167	70.81215	14.14137	0.12890	2.04305	115.48136	0.03720	128.32804

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00422	0.00595	0.00879	22.28817	1.25856	0.00666	3.92255	0.36020	0.00375
#2	0.00395	0.00632	0.00803	22.33098	1.25549	0.00667	3.92194	0.36062	0.00388
Mean	0.00408	0.00613	0.00841	22.30958	1.25702	0.00666	3.92224	0.36041	0.00382
%RSD	4.66785	4.24961	6.31270	0.13568	0.17223	0.08312	0.01108	0.08168	2.32961

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.06481	0.00379	0.51303	0.02187	0.02319	1.73271	0.00201	0.11562	0.11780
#2	0.06457	0.00414	0.49451	0.02497	0.02310	1.70283	0.00068	0.12263	0.12459
Mean	0.06469	0.00397	0.50377	0.02342	0.02315	1.71777	0.00134	0.11913	0.12119
%RSD	0.26850	6.24715	2.59952	9.35302	0.25692	1.22992	69.63455	4.16018	3.96476

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	3.29958	-0.00141	0.06453	0.03698	-0.00452	0.25371	0.18289	0.06286	0.00481
#2	3.30689	0.00372	0.06453	0.03674	-0.00545	0.25111	0.18368	0.06166	0.00478
Mean	3.30323	0.00116	0.06453	0.03686	-0.00498	0.25241	0.18328	0.06226	0.00479
%RSD	0.15646	313.55830	0.00000	0.45427	13.26483	0.72679	0.30141	1.36344	0.45836

	Pb calc	Se calc
#1	0.02275	0.11707
#2	0.02372	0.12394
Mean	0.02324	0.12051
%RSD	2.96807	4.02909

Method : Paragon2 File : 130311A
SampleId1 : 1303060-10 5X SampleId2 :
Analysis commenced : 3/11/2013 18:29:35
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:19
[SAMPLE]

Position : TUBE96

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00103	11.04952	0.02750	-0.00248	0.19486	0.00104	0.00556	34.59396	-0.00019
#2	-0.00069	10.97467	0.02668	-0.00371	0.19333	0.00101	-0.00198	34.34128	0.00011
Mean	-0.00086	11.01210	0.02709	-0.00310	0.19409	0.00102	0.00179	34.46762	-0.00004
%RSD	27.55778	0.48065	2.12957	28.00071	0.55874	2.50460	297.69842	0.51837	545.63811

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00667	0.00983	0.02224	26.19973	3.72821	0.00960	6.14335	0.47457	0.02575
#2	0.00662	0.00937	0.02159	26.02971	3.70363	0.00950	6.09352	0.47219	0.02550
Mean	0.00665	0.00960	0.02192	26.11472	3.71592	0.00955	6.11843	0.47338	0.02563
%RSD	0.51206	3.34109	2.07987	0.46038	0.46770	0.79230	0.57593	0.35569	0.69376

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.12261	0.00837	0.70492	0.04345	0.04330	5.32660	-0.00360	0.08594	0.08509
#2	0.12129	0.00816	0.71476	0.04223	0.04737	5.30788	-0.00096	0.08249	0.08648
Mean	0.12195	0.00827	0.70984	0.04284	0.04534	5.31724	-0.00228	0.08422	0.08578
%RSD	0.76026	1.87511	0.97996	2.01401	6.35785	0.24899	81.99743	2.89712	1.14048

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.63139	-0.00143	0.12574	0.06095	-0.00211	0.26464	0.35969	0.10077	0.00823
#2	4.61209	0.00186	0.12451	0.06132	-0.00388	0.24980	0.35753	0.10094	0.00839
Mean	4.62174	0.00021	0.12513	0.06113	-0.00299	0.25722	0.35861	0.10085	0.00831
%RSD	0.29524	1096.84617	0.69090	0.43290	41.58617	4.08025	0.42430	0.12026	1.37957

	Pb calc	Se calc
#1	0.04335	0.08537
#2	0.04566	0.08515
Mean	0.04451	0.08526
%RSD	3.67418	0.18756

Method : Paragon2 File : 130311A
SampleId1 : 1303060-1 5X SampleId2 :
Analysis commenced : 3/11/2013 18:31:21
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:19

[SAMPLE]

Position : TUBE97

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00039	13.90819	0.00920	-0.00163	0.16284	0.00087	0.00198	30.39518	-0.00038
#2	-0.00034	13.84488	0.01060	-0.00071	0.16240	0.00086	0.00128	30.33584	-0.00029
Mean	-0.00037	13.87653	0.00990	-0.00117	0.16262	0.00087	0.00163	30.36551	-0.00033
%RSD	8.82481	0.32259	9.99140	55.80549	0.19050	1.27357	30.47915	0.13818	19.46492

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01069	0.01308	0.01918	30.72823	3.34687	0.01177	8.89428	0.42195	0.00048
#2	0.01065	0.01275	0.01776	30.74320	3.32538	0.01177	8.87764	0.42183	0.00042
Mean	0.01067	0.01291	0.01847	30.73572	3.33612	0.01177	8.88596	0.42189	0.00045
%RSD	0.30976	1.80039	5.40952	0.03443	0.45558	0.03136	0.13235	0.01995	9.81248

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.10446	0.01745	0.80834	0.02065	0.02105	1.01208	0.00043	-0.00348	0.01074
#2	0.10343	0.01624	0.80262	0.02408	0.01994	0.99714	0.00030	0.00573	0.00740
Mean	0.10394	0.01685	0.80548	0.02237	0.02050	1.00461	0.00036	0.00112	0.00907
%RSD	0.69666	5.05995	0.50223	10.84727	3.82677	1.05096	24.70007	578.97895	26.06683

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.71296	-0.00217	0.11281	0.06080	-0.00192	0.02521	0.03722	0.08670	0.00640
#2	4.69514	-0.00363	0.11235	0.06125	-0.00299	0.02585	0.03711	0.08687	0.00650
Mean	4.70405	-0.00290	0.11258	0.06102	-0.00245	0.02553	0.03717	0.08679	0.00645
%RSD	0.26788	35.72717	0.28941	0.51334	30.74143	1.78356	0.21175	0.13975	1.12227

	Pb calc	Se calc
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#1 0.02092 0.00601ser: STEVE WORKMAN
 #2 0.02132 0.00684
Mean 0.02112 0.00643
 %RSD 1.34797 9.19170

Method : Paragon2 File : 130311A
SampleId1 : 1303060-1D 5X SampleId2 :
Analysis commenced : 3/11/2013 18:33:07
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:19
[SAMPLE]

Position : TUBE98

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00049	13.55736	0.00920	-0.00040	0.15974	0.00082	0.00775	30.01668	0.00020
#2	-0.00117	13.60838	0.01153	-0.00261	0.15966	0.00083	-0.00276	30.08167	0.00018
Mean	-0.00083	13.58287	0.01036	-0.00150	0.15970	0.00082	0.00250	30.04918	0.00019
%RSD	58.13379	0.26559	15.90328	103.87437	0.03233	0.60031	297.45059	0.15293	5.86914

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01047	0.01317	0.01738	29.97079	3.28334	0.01151	8.65959	0.40517	0.00067
#2	0.01074	0.01221	0.01730	30.04972	3.29609	0.01151	8.68453	0.40642	0.00048
Mean	0.01060	0.01269	0.01734	30.01025	3.28971	0.01151	8.67206	0.40580	0.00058
%RSD	1.80125	5.30776	0.30689	0.18596	0.27414	0.01603	0.20341	0.21771	23.04231

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.10077	0.01699	0.79942	0.02437	0.01909	0.97848	-0.00340	0.00835	0.00402
#2	0.10163	0.01589	0.81132	0.02493	0.01794	0.95982	-0.00180	0.00421	0.00421
Mean	0.10120	0.01644	0.80537	0.02465	0.01852	0.96915	-0.00260	0.00628	0.00411
%RSD	0.60104	4.71341	1.04479	1.60528	4.37622	1.36174	43.42370	46.64938	3.24601

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	3.51464	-0.00180	0.11063	0.05802	0.00129	0.03440	0.03713	0.08636	0.00689
#2	3.52750	-0.00253	0.11082	0.05847	0.00179	0.01498	0.03678	0.08670	0.00689
Mean	3.52107	-0.00216	0.11073	0.05825	0.00154	0.02469	0.03695	0.08653	0.00689
%RSD	0.25827	23.94348	0.12010	0.54709	23.22186	55.59774	0.68117	0.28032	0.02462

	Pb calc	Se calc
#1	0.02085	0.00546
#2	0.02027	0.00421
Mean	0.02056	0.00483
%RSD	1.98817	18.32661

Method : Paragon2 File : 130311A
SampleId1 : 1303060-1L 25X SampleId2 :
Analysis commenced : 3/11/2013 18:34:54

Printed : 3/12/2013 13:06:19
[SAMPLE]

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE99

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00177	2.71023	-0.00013	-0.00899	0.03149	-0.00024	-0.00395	6.03492	-0.00109
#2	-0.00176	2.70824	0.00162	-0.00819	0.03130	-0.00026	0.00094	5.99731	-0.00037
Mean	-0.00176	2.70923	0.00075	-0.00859	0.03140	-0.00025	-0.00150	6.01611	-0.00073
%RSD	0.54813	0.05209	165.07449	6.56570	0.41086	5.70809	230.20146	0.44211	69.24451

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00090	0.00102	0.00181	5.98378	0.49706	-0.00033	1.75529	0.08502	-0.00178
#2	0.00108	0.00080	0.00117	5.95777	0.47706	-0.00037	1.73472	0.08455	-0.00266
Mean	0.00099	0.00091	0.00149	5.97078	0.48706	-0.00035	1.74500	0.08479	-0.00222
%RSD	12.89106	17.03421	30.51578	0.30802	2.90318	8.47528	0.83348	0.39592	28.04876

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.02781	0.00147	0.14213	-0.00231	0.00333	0.19109	-0.00481	-0.00133	0.00799
#2	0.02655	0.00123	0.15081	-0.00311	0.00517	0.19109	-0.00507	-0.00533	0.00359
Mean	0.02718	0.00135	0.14647	-0.00271	0.00425	0.19109	-0.00494	-0.00333	0.00579
%RSD	3.30000	12.62654	4.19009	20.82907	30.66803	0.00000	3.79798	84.96400	53.83375

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	0.80923	-0.00613	0.01900	0.00923	0.00161	-0.02657	0.00654	0.01605	0.00027
#2	0.81018	-0.00101	0.01890	0.00913	0.00243	-0.04468	0.00617	0.01536	0.00000
Mean	0.80971	-0.00357	0.01895	0.00918	0.00202	-0.03562	0.00635	0.01570	0.00013
%RSD	0.08365	101.48702	0.38567	0.82386	28.43731	35.92867	4.19780	3.08852	140.46624

	Pb calc	Se calc
#1	0.00145	0.00489
#2	0.00241	0.00062
Mean	0.00193	0.00275
%RSD	35.26249	109.76572

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:19

SampleId1 : 1303060-1MS 5X

SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 18:36:40

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE100

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.01879	18.83711	0.22177	0.17034	0.37651	0.01166	0.00509	37.84699	0.01052
#2	0.01843	18.71700	0.21408	0.17120	0.37436	0.01162	0.00386	37.68770	0.01045

Mean	0.01861	18.77705	0.21792	0.17077	0.37543	0.01164	0.00447	37.76735	0.01048
%RSD	1.37488	0.45229	2.49544	0.35551	0.40619	0.23194	19.47386	0.29823	0.52634
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.11341	0.05804	0.07209	31.92205	11.08813	0.11054	17.65612	0.51089	0.19097
#2	0.11259	0.05743	0.07126	31.82291	11.02176	0.11022	17.55160	0.50952	0.18858
Mean	0.11300	0.05773	0.07167	31.87248	11.05495	0.11038	17.60386	0.51020	0.18977
%RSD	0.51056	0.74470	0.82166	0.21996	0.42449	0.20549	0.41984	0.18982	0.89028
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	7.27523	0.12171	0.81841	0.12887	0.12459	1.12033	0.06122	0.39449	0.37784
#2	7.23028	0.12077	0.81040	0.13088	0.12538	1.09793	0.05765	0.39269	0.39426
Mean	7.25276	0.12124	0.81441	0.12987	0.12499	1.10913	0.05943	0.39359	0.38605
%RSD	0.43824	0.54967	0.69543	1.09647	0.44546	1.42799	4.24292	0.32395	3.00792
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.09955	0.10785	0.21894	0.14874	0.39272	0.02628	0.14462	0.19736	0.00630
#2	4.08334	0.10712	0.21786	0.14839	0.39623	0.01143	0.14406	0.19513	0.00625
Mean	4.09144	0.10748	0.21840	0.14857	0.39447	0.01886	0.14434	0.19624	0.00628
%RSD	0.28000	0.48110	0.34740	0.16355	0.63028	55.70222	0.27568	0.80380	0.63597
	Pb	Se							
	calc	calc							
#1	0.12602	0.38339							
#2	0.12721	0.39374							
Mean	0.12661	0.38856							
%RSD	0.66782	1.88404							

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 18:38:26
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:20
[CV]

Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19369	50.39866	0.51711	0.98271	1.00096	0.49659	0.52037	50.31147	0.49892
#2	0.19256	50.08407	0.51047	0.97523	0.99468	0.49586	0.50522	50.20214	0.49629
Mean	0.19313	50.24137	0.51379	0.97897	0.99782	0.49622	0.51279	50.25680	0.49761
%RSD	0.41522	0.44276	0.91378	0.54023	0.44446	0.10446	2.08874	0.15382	0.37335
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48771	0.98438	1.00099	20.00853	48.71831	0.51798	50.07415	0.97653	0.97483
#2	0.48607	0.98092	0.99529	19.95244	48.39251	0.51499	49.91163	0.97473	0.97169
Mean	0.48689	0.98265	0.99814	19.98048	48.55541	0.51649	49.99289	0.97563	0.97326

%RSD	0.23738	0.24911	0.40415	0.19849	0.47445	0.41027	0.22988	0.12996	0.22876
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	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.29002	0.96606	4.87291	0.98540	0.96658	5.22924	0.47668	1.01969	0.97495
#2	47.97695	0.96129	4.85439	0.98520	0.97922	5.19554	0.47487	1.00532	1.00453
Mean	48.13348	0.96368	4.86365	0.98530	0.97290	5.21239	0.47577	1.01250	0.98974
%RSD	0.45991	0.35060	0.26924	0.01431	0.91854	0.45716	0.27018	1.00345	2.11332

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.96539	1.02964	0.48655	0.50517	0.50826	4.85332	0.48634	1.00558	0.96844
#2	4.94618	1.02745	0.48349	0.50426	0.50846	4.83133	0.48630	1.00644	0.96468
Mean	4.95579	1.02855	0.48502	0.50471	0.50836	4.84233	0.48632	1.00601	0.96656
%RSD	0.27409	0.15092	0.44566	0.12718	0.02782	0.32111	0.00514	0.06051	0.27509

	Pb	Se
	calc	calc
#1	0.97285	0.98984
#2	0.98121	1.00479
Mean	0.97703	0.99732
%RSD	0.60527	1.05963

Method : Paragon2
SampleId1 : CCB
Analysis commenced : 3/11/2013 18:52:32
Dilution ratio : 1.00000 to 1.00000

File : 130311A

Printed : 3/12/2013 13:06:20

SampleId2 :

[CB]

Tray :

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00004	-0.00741	-0.00106	-0.00892	-0.00054	-0.00035	-0.00871	-0.07116	-0.00019
#2	0.00041	-0.00253	-0.00246	-0.00862	-0.00058	-0.00034	-0.00153	-0.07053	-0.00045
Mean	0.00018	-0.00497	-0.00176	-0.00877	-0.00056	-0.00035	-0.00512	-0.07085	-0.00032
%RSD	175.17872	69.33980	56.28844	2.47230	4.59205	2.66193	99.21023	0.62351	55.64683

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00115	-0.00085	-0.00158	0.00517	-0.12753	-0.00276	-0.02120	-0.00063	-0.00310
#2	-0.00057	-0.00020	-0.00112	0.00564	-0.12683	-0.00275	-0.01966	-0.00058	-0.00197
Mean	-0.00086	-0.00052	-0.00135	0.00540	-0.12718	-0.00276	-0.02043	-0.00061	-0.00253
%RSD	48.36317	87.15654	23.95544	6.11475	0.39207	0.26798	5.30825	6.93054	31.58772

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01051	-0.00147	-0.00698	-0.00092	-0.00153	-0.02154	-0.00769	-0.00628	0.00270
#2	0.01104	-0.00083	-0.01086	0.00143	-0.00404	-0.01408	0.00035	-0.00586	0.00410
Mean	0.01077	-0.00115	-0.00892	0.00025	-0.00278	-0.01781	-0.00367	-0.00607	0.00340
%RSD	3.49042	39.13511	30.75199	651.25741	63.75274	29.62403	155.07732	4.95872	29.30060

ted: 3/12/2013 13:06:31 User: STEVE WORKMAN

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00491	-0.00758	-0.00403	-0.00265	-0.00151	-0.03196	-0.00020	-0.00110	-0.00028
#2	0.00807	0.00230	-0.00400	-0.00261	0.00041	-0.01773	-0.00029	-0.00144	-0.00004
Mean	0.00649	-0.00264	-0.00401	-0.00263	-0.00055	-0.02485	-0.00024	-0.00127	-0.00016
%RSD	34.39473	264.53484	0.49677	1.02805	244.96590	40.48668	25.14330	19.06381	106.97002

	Pb	Se
	calc	calc
#1	-0.00132	-0.00029
#2	-0.00222	0.00079
Mean	-0.00177	0.00025
%RSD	35.63172	310.18884

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:20

SampleId1 : 1303060-1MSD 5X SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 18:56:10

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : TUBE101

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01933	19.39235	0.22806	0.17169	0.37977	0.01181	0.00369	38.57120	0.01054
#2	0.01883	19.33521	0.22247	0.16948	0.37889	0.01177	0.00457	38.45466	0.01065
Mean	0.01908	19.36378	0.22527	0.17058	0.37933	0.01179	0.00413	38.51293	0.01059
%RSD	1.86666	0.20864	1.75570	0.91515	0.16354	0.23673	14.95753	0.21398	0.74052

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.11477	0.05842	0.07292	32.67457	11.18339	0.11105	17.83177	0.52149	0.18933
#2	0.11373	0.05777	0.07293	32.61396	11.18220	0.11090	17.79621	0.52172	0.18719
Mean	0.11425	0.05809	0.07293	32.64426	11.18279	0.11097	17.81399	0.52160	0.18826
%RSD	0.64484	0.79032	0.01036	0.13130	0.00755	0.09638	0.14117	0.03229	0.80295

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	7.27815	0.12226	0.82596	0.12715	0.12112	1.01954	0.06226	0.38886	0.38022
#2	7.27177	0.12026	0.81750	0.12533	0.12423	1.02701	0.05909	0.38899	0.39055
Mean	7.27496	0.12126	0.82173	0.12624	0.12268	1.02327	0.06067	0.38893	0.38538
%RSD	0.06206	1.16305	0.72864	1.01639	1.79415	0.51590	3.69262	0.02313	1.89541

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.08696	0.10419	0.22137	0.14697	0.39704	0.03908	0.14569	0.20697	0.00686
#2	4.08875	0.10419	0.22088	0.14748	0.40224	0.02810	0.14533	0.20457	0.00671
Mean	4.08786	0.10419	0.22112	0.14722	0.39964	0.03359	0.14551	0.20577	0.00679
%RSD	0.03093	0.00040	0.15652	0.24574	0.92036	23.11793	0.17238	0.82560	1.55236

	Pb	Seser: STEVE WORKMAN
	calc	calc
#1	0.12313	0.38310
#2	0.12460	0.39003
Mean	0.12386	0.38656
%RSD	0.84028	1.26813

Method : Paragon2 File : 130311A
SampleId1 : 1303060-2 5X **SampleId2 :**
Analysis commenced : 3/11/2013 18:57:57
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:20
[SAMPLE]
Position : TUBE102

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00044	10.31389	0.05186	-0.00353	0.20596	0.00155	-0.00106	25.07702	-0.00047
#2	0.00029	10.22993	0.04696	-0.00328	0.20355	0.00154	0.00332	25.00565	0.00013
Mean	0.00036	10.27191	0.04941	-0.00340	0.20476	0.00154	0.00113	25.04133	-0.00017
%RSD	28.70566	0.57794	7.00538	5.09568	0.83234	0.47236	274.19444	0.20153	250.29986

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00753	0.00623	0.01137	24.61054	2.51591	0.00923	5.01314	0.39655	0.07654
#2	0.00870	0.00726	0.01258	24.55087	2.50978	0.00917	5.01038	0.39571	0.07547
Mean	0.00812	0.00675	0.01197	24.58071	2.51284	0.00920	5.01176	0.39613	0.07601
%RSD	10.20883	10.87325	7.18006	0.17166	0.17261	0.46136	0.03904	0.14867	0.99418

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08664	0.00745	0.63447	0.06313	0.05575	7.96536	-0.00247	0.20198	0.18742
#2	0.08664	0.00855	0.62623	0.06780	0.05539	8.00663	0.00186	0.20047	0.19174
Mean	0.08664	0.00800	0.63035	0.06547	0.05557	7.98600	-0.00030	0.20123	0.18958
%RSD	0.00000	9.68370	0.92368	5.03653	0.45784	0.36543	1005.40380	0.52876	1.60875

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.75603	0.00041	0.07747	0.04668	0.00308	1.27767	0.63657	0.05086	0.01226
#2	4.72760	0.00407	0.07665	0.04671	0.00425	1.28609	0.63418	0.05137	0.01266
Mean	4.74182	0.00224	0.07706	0.04669	0.00366	1.28188	0.63537	0.05111	0.01246
%RSD	0.42403	115.42529	0.75048	0.04627	22.65139	0.46438	0.26593	0.71173	2.27947

	Pb	Se
	calc	calc
#1	0.05821	0.19227
#2	0.05952	0.19465
Mean	0.05887	0.19346
%RSD	1.57692	0.86838

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:20

SampleId1 : 1303060-3 5X SampleId2 :
 Analysis commenced : 3/11/2013 18:59:45
 Dilution ratio : 1.00000 to 1.00000 Tray :

[SAMPLE]
 Position : TUBE103

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00011	10.89682	0.01922	-0.00255	0.16185	0.00086	-0.00750	15.39733	-0.00055
#2	-0.00016	10.97494	0.01957	-0.00445	0.16236	0.00082	-0.00260	15.41612	0.00006
Mean	-0.00003	10.93588	0.01940	-0.00350	0.16211	0.00084	-0.00505	15.40673	-0.00025
%RSD	706.49469	0.50511	1.27462	38.45241	0.22296	3.73948	68.60491	0.08624	173.87677
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00679	0.00885	0.01354	23.13708	2.33851	0.00758	5.29141	0.34498	0.00564
#2	0.00603	0.00819	0.01328	23.21961	2.34182	0.00759	5.30494	0.34623	0.00551
Mean	0.00641	0.00852	0.01341	23.17834	2.34016	0.00758	5.29818	0.34560	0.00558
%RSD	8.46979	5.50897	1.39630	0.25180	0.09978	0.14602	0.18057	0.25551	1.59428
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.07579	0.00930	0.65711	0.05096	0.04552	4.10265	-0.00053	0.07355	0.06845
#2	0.07534	0.00835	0.66260	0.04449	0.04879	4.11387	-0.00118	0.06240	0.07568
Mean	0.07556	0.00882	0.65986	0.04772	0.04716	4.10826	-0.00086	0.06798	0.07206
%RSD	0.42149	7.55228	0.58830	9.59176	4.90384	0.19319	53.52735	11.59845	7.10343
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	3.69133	-0.00105	0.07633	0.04491	0.00303	0.10418	0.24851	0.06252	0.00857
#2	3.71572	-0.00142	0.07666	0.04498	-0.00493	0.08606	0.24807	0.06286	0.00813
Mean	3.70353	-0.00123	0.07649	0.04495	-0.00095	0.09512	0.24829	0.06269	0.00835
%RSD	0.46559	20.99689	0.30414	0.10815	594.08526	13.47126	0.12574	0.38689	3.72990
	Pb calc	Se calc							
#1	0.04733	0.07015							
#2	0.04736	0.07126							
Mean	0.04735	0.07070							
%RSD	0.03852	1.11572							

Method : Paragon2 File : 130311A
 SampleId1 : 1303060-4 5X SampleId2 :
 Analysis commenced : 3/11/2013 19:01:32
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:20
 [SAMPLE]
 Position : TUBE104

Final concentrations

Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
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#1	-0.00070	8.14986	0.03461	-0.00451	0.13787	0.00082	0.00146	54.74140	-0.00006
#2	-0.00080	8.22528	0.03414	-0.00512	0.13871	0.00083	0.00147	55.01673	-0.00067
Mean	-0.00075	8.18757	0.03437	-0.00481	0.13829	0.00082	0.00146	54.87906	-0.00036
%RSD	9.03890	0.65139	0.95901	9.00701	0.42932	1.02370	0.17265	0.35476	117.80487

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00595	0.00572	0.00932	20.42147	2.28474	0.00727	5.56172	0.72789	0.09389
#2	0.00605	0.00630	0.01017	20.54595	2.30455	0.00732	5.61062	0.73188	0.09685
Mean	0.00600	0.00601	0.00975	20.48371	2.29464	0.00729	5.58617	0.72989	0.09537
%RSD	1.07534	6.78764	6.12113	0.42971	0.61052	0.43022	0.61897	0.38720	2.19068

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08828	0.00780	0.55671	0.03426	0.03386	4.39450	0.00093	0.08472	0.09798
#2	0.08836	0.00719	0.56380	0.03782	0.03395	4.45812	-0.00130	0.09915	0.10020
Mean	0.08832	0.00750	0.56025	0.03604	0.03391	4.42631	-0.00018	0.09194	0.09909
%RSD	0.06558	5.78746	0.89473	6.98663	0.18350	1.01629	855.37789	11.10395	1.58645

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.39711	0.00261	0.10841	0.04114	0.00280	0.27991	0.31289	0.05206	0.00593
#2	3.42718	-0.00141	0.10911	0.04129	-0.00811	0.28377	0.31598	0.05206	0.00605
Mean	3.41215	0.00060	0.10876	0.04122	-0.00265	0.28184	0.31443	0.05206	0.00599
%RSD	0.62316	473.30172	0.45851	0.26209	290.84270	0.96779	0.69447	0.00000	1.33826

	Pb	Se
	calc	calc
#1	0.03399	0.09356
#2	0.03524	0.09985
Mean	0.03462	0.09671
%RSD	2.54199	4.59936

Method : Paragon2 File : 130311A
SampleId1 : 1303060-5 5X SampleId2 :
Analysis commenced : 3/11/2013 19:03:20
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:21
[SAMPLE]

Position : TUBE105

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00155	11.08808	0.04521	-0.00273	0.22605	0.00130	0.00384	22.54549	-0.00019
#2	-0.00057	11.00983	0.04265	-0.00365	0.22459	0.00126	0.00384	22.45362	-0.00048
Mean	-0.00106	11.04896	0.04393	-0.00319	0.22532	0.00128	0.00384	22.49955	-0.00034
%RSD	65.06615	0.50076	4.12706	20.39482	0.45847	2.21872	0.00809	0.28872	60.61655

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00735	0.00706	0.01215	25.03577	2.93127	0.00933	5.47746	0.39506	0.04637

#2	0.00757	0.00639	0.01187	24.94601	2.92395	0.00930	5.43994	0.39393	0.04738
Mean	0.00746	0.00672	0.01201	24.99089	2.92761	0.00931	5.45870	0.39450	0.04687
%RSD	2.11763	7.10348	1.65989	0.25398	0.17675	0.19820	0.48600	0.20260	1.51725

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.07452	0.00897	0.64041	0.05390	0.05500	7.23770	-0.00186	0.17335	0.17541
#2	0.07419	0.00752	0.63858	0.05371	0.05567	7.21520	0.00053	0.18105	0.18801
Mean	0.07435	0.00824	0.63950	0.05381	0.05534	7.22645	-0.00067	0.17720	0.18171
%RSD	0.31152	12.40862	0.20233	0.24217	0.85016	0.22015	253.96380	3.07260	4.90311

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.49243	-0.00141	0.07759	0.03916	-0.00661	0.66773	0.55805	0.06355	0.01032
#2	3.47614	-0.00360	0.07710	0.03942	0.00277	0.66710	0.55617	0.06303	0.01042
Mean	3.48429	-0.00251	0.07734	0.03929	-0.00192	0.66742	0.55711	0.06329	0.01037
%RSD	0.33066	61.94101	0.44690	0.46738	345.96546	0.06680	0.23836	0.57483	0.62874

	Pb	Se
	calc	calc
#1	0.05464	0.17473
#2	0.05502	0.18569
Mean	0.05483	0.18021
%RSD	0.49318	4.30374

Method : Paragon2 File : 130311A
SampleId1 : 1303060-6 5X SampleId2 :
Analysis commenced : 3/11/2013 19:05:08
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:21
[SAMPLE]
Position : TUBE106

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00158	15.96954	0.02179	0.00058	0.23386	0.00110	-0.00342	28.66521	-0.00012
#2	-0.00033	15.88966	0.02587	0.00034	0.23233	0.00109	0.00131	28.52995	-0.00026
Mean	-0.00096	15.92960	0.02383	0.00046	0.23310	0.00110	-0.00105	28.59758	-0.00019
%RSD	92.84367	0.35460	12.10632	37.74447	0.46535	0.78917	317.94786	0.33443	53.55924

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01046	0.01366	0.02174	32.08244	4.41129	0.01376	7.24798	0.48153	0.01155
#2	0.01109	0.01401	0.02316	31.95150	4.39733	0.01371	7.20643	0.47998	0.01199
Mean	0.01077	0.01383	0.02245	32.01697	4.40431	0.01373	7.22721	0.48076	0.01177
%RSD	4.13459	1.78575	4.45599	0.28918	0.22407	0.26877	0.40652	0.22766	2.64404

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.16109	0.01506	0.80079	0.03231	0.03642	2.60694	-0.00176	0.03007	0.03743
#2	0.16125	0.01541	0.79736	0.03628	0.03395	2.60320	-0.00176	0.03144	0.03741

Mean	0.16117	0.01523	0.79907	0.03430	0.03519	2.60507	-0.00176	0.03076	0.03742
%RSD	0.07195	1.62763	0.30375	8.19896	4.96395	0.10144	0.11621	3.15399	0.03890
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.53993	-0.00032	0.12889	0.04801	-0.00431	0.19244	0.17121	0.08602	0.00852
#2	3.53188	0.00187	0.12778	0.04832	0.00516	0.18988	0.17124	0.08636	0.00917
Mean	3.53590	0.00078	0.12833	0.04816	0.00043	0.19116	0.17122	0.08619	0.00884
%RSD	0.16099	199.96247	0.61147	0.45978	1573.27877	0.94802	0.01301	0.28144	5.16206
	Pb	Se							
	calc	calc							
#1	0.03505	0.03498							
#2	0.03473	0.03542							
Mean	0.03489	0.03520							
%RSD	0.65532	0.89010							

Method : Paragon2 File : 130311A
SampleId1 : 1303060-7 5X SampleId2 :
Analysis commenced : 3/11/2013 19:06:57
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:21

[SAMPLE]

Position : TUBE107

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00091	9.98307	0.02796	-0.00310	0.16565	0.00095	-0.00038	37.18941	-0.00016
#2	-0.00058	9.91355	0.03123	-0.00340	0.16434	0.00090	0.00067	36.97453	0.00002
Mean	-0.00075	9.94831	0.02960	-0.00325	0.16499	0.00093	0.00015	37.08197	-0.00007
%RSD	31.97922	0.49413	7.79703	6.67002	0.56330	4.28864	503.31603	0.40976	182.65750
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00723	0.00862	0.01726	23.95583	2.99832	0.00769	5.40796	0.43219	0.02613
#2	0.00718	0.00854	0.01653	23.81935	2.98581	0.00767	5.36491	0.42969	0.02544
Mean	0.00721	0.00858	0.01689	23.88759	2.99206	0.00768	5.38643	0.43094	0.02578
%RSD	0.45561	0.70263	3.08437	0.40400	0.29571	0.21623	0.56516	0.41011	1.89621
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.09082	0.01033	0.77562	0.04415	0.04195	4.46186	-0.00200	0.09821	0.10470
#2	0.09078	0.00973	0.78706	0.04319	0.04449	4.42444	-0.00345	0.11634	0.10750
Mean	0.09080	0.01003	0.78134	0.04367	0.04322	4.44315	-0.00272	0.10727	0.10610
%RSD	0.03190	4.17216	1.03542	1.54525	4.15117	0.59556	37.71821	11.95087	1.86573
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.82750	-0.00069	0.08126	0.05442	-0.00759	0.44353	0.32992	0.06252	0.00643
#2	3.79941	0.00004	0.08050	0.05413	-0.00014	0.42674	0.32672	0.06389	0.00654
Mean	3.81346	-0.00033	0.08088	0.05428	-0.00387	0.43513	0.32832	0.06321	0.00648

%RSD	0.52080	157.54435	0.66570	0.36820	136.14599	2.72826	0.69038	1.53496	1.24585
	Pb	Se							
	calc	calc							
#1	0.04268	0.10254							
#2	0.04406	0.11045							
Mean	0.04337	0.10649							
%RSD	2.24103	5.24862							

Method : Paragon2 File : 130311A Printed : 3/12/2013 13:06:21
SampleId1 : 1303060-8 5X **SampleId2 :**
Analysis commenced : 3/11/2013 19:08:45 **[SAMPLE]**
Dilution ratio : 1.00000 to 1.00000 Tray : Position : TUBE108

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00007	10.81667	0.03531	-0.00199	0.16591	0.00115	0.00161	32.47466	0.00011
#2	-0.00086	10.75559	0.03449	-0.00353	0.16499	0.00111	0.00756	32.24422	0.00026
Mean	-0.00040	10.78613	0.03490	-0.00276	0.16545	0.00113	0.00458	32.35944	0.00018
%RSD	165.14257	0.40042	1.65305	39.27816	0.39010	2.93793	91.83704	0.50355	57.93582

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00817	0.00900	0.01548	23.98541	3.13503	0.00833	5.51867	0.44475	0.02531
#2	0.00799	0.00883	0.01530	23.84997	3.10929	0.00824	5.47346	0.44219	0.02475
Mean	0.00808	0.00891	0.01539	23.91769	3.12216	0.00829	5.49606	0.44347	0.02503
%RSD	1.58382	1.33049	0.82490	0.40043	0.58292	0.69059	0.58161	0.40805	1.59820

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.10630	0.01015	0.77768	0.05115	0.04519	4.55168	0.00103	0.11791	0.10550
#2	0.10532	0.01000	0.78386	0.04910	0.04711	4.46186	-0.00254	0.10841	0.11138
Mean	0.10581	0.01007	0.78077	0.05012	0.04615	4.50677	-0.00076	0.11316	0.10844
%RSD	0.65703	1.07696	0.55954	2.88529	2.94480	1.40923	333.30712	5.93273	3.83741

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.24004	0.00442	0.07339	0.06004	-0.00265	0.63171	0.39486	0.08259	0.00783
#2	4.21962	0.00003	0.07276	0.05950	-0.00367	0.62268	0.39374	0.08207	0.00755
Mean	4.22983	0.00223	0.07308	0.05977	-0.00316	0.62719	0.39430	0.08233	0.00769
%RSD	0.34142	139.43846	0.60033	0.63253	22.91727	1.01797	0.19984	0.44194	2.51673

	Pb	Se							
	calc	calc							
#1	0.04717	0.10963							
#2	0.04778	0.11039							
Mean	0.04748	0.11001							
%RSD	0.89502	0.49093							

ted: 3/12/2013 13:06:32 User: STEVE WORKMAN
 Method : Paragon2 File : 130311A
 SampleId1 : 1303060-11 5X SampleId2 :
 Analysis commenced : 3/11/2013 19:10:32
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:21
 [SAMPLE]
 Position : TUBE109

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00149	18.07869	0.02330	0.00580	0.22331	0.00121	-0.00234	24.52878	-0.00013
#2	-0.00103	17.94278	0.02610	0.00414	0.22236	0.00118	-0.00286	24.44587	-0.00035
Mean	-0.00126	18.01074	0.02470	0.00497	0.22283	0.00119	-0.00260	24.48732	-0.00024
%RSD	25.52688	0.53356	8.00768	23.57206	0.30132	2.16492	14.18370	0.23942	65.59323
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.01075	0.01571	0.02244	34.50351	4.57216	0.01487	7.79189	0.45004	0.02789
#2	0.01102	0.01531	0.02196	34.41277	4.53218	0.01480	7.76757	0.44861	0.02858
Mean	0.01089	0.01551	0.02220	34.45814	4.55217	0.01483	7.77973	0.44933	0.02824
%RSD	1.75171	1.81081	1.54970	0.18620	0.62111	0.31104	0.22105	0.22479	1.73159
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.58817	0.01729	0.73764	0.03482	0.03228	6.43921	-0.00210	0.04950	0.05763
#2	0.58368	0.01662	0.73970	0.03721	0.03478	6.45420	-0.00380	0.05996	0.05612
Mean	0.58593	0.01696	0.73867	0.03601	0.03353	6.44671	-0.00295	0.05473	0.05688
%RSD	0.54254	2.83354	0.19712	4.69386	5.28918	0.16443	40.87055	13.51494	1.88029
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.23305	0.00040	0.14840	0.05266	-0.00522	0.24827	0.13770	0.10180	0.00926
#2	4.20931	0.00443	0.14760	0.05275	-0.00060	0.26445	0.13662	0.10180	0.00913
Mean	4.22118	0.00242	0.14800	0.05271	-0.00291	0.25636	0.13716	0.10180	0.00920
%RSD	0.39764	117.72448	0.38199	0.12297	112.25808	4.46372	0.55523	0.00000	1.03280
	Pb calc	Se calc							
#1	0.03312	0.05492							
#2	0.03559	0.05740							
Mean	0.03436	0.05616							
%RSD	5.08139	3.11573							

Method : Paragon2 File : 130311A
 SampleId1 : 1303060-12 5X SampleId2 :
 Analysis commenced : 3/11/2013 19:12:19
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:22
 [SAMPLE]
 Position : TUBE110

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.00056	6.93923	0.00990	-0.00389	0.16477	0.00036	0.00140	38.43502	-0.00053
#2	0.00047	6.89906	0.00605	-0.00469	0.16361	0.00032	0.00000	38.32029	-0.00004
Mean	0.00051	6.91914	0.00798	-0.00429	0.16419	0.00034	0.00070	38.37765	-0.00029
%RSD	13.04029	0.41050	34.10201	13.13080	0.50316	6.79217	140.55898	0.21138	121.83532

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00720	0.00721	0.00930	18.88289	1.36667	0.00605	8.38212	0.26193	-0.00184
#2	0.00679	0.00744	0.00911	18.82847	1.36337	0.00606	8.34763	0.26116	-0.00090
Mean	0.00699	0.00733	0.00920	18.85568	1.36502	0.00606	8.36488	0.26154	-0.00137
%RSD	4.12786	2.21560	1.47106	0.20406	0.17083	0.09139	0.29154	0.20887	48.66792

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.09737	0.01116	0.52675	0.02037	0.00518	0.46719	0.00631	0.00572	-0.00182
#2	0.09667	0.00986	0.53110	0.01378	0.00806	0.48211	0.00209	-0.00569	-0.00491
Mean	0.09702	0.01051	0.52892	0.01708	0.00662	0.47465	0.00420	0.00001	-0.00336
%RSD	0.50748	8.69874	0.58081	27.29016	30.67665	2.22354	71.05165	54008.85306	64.99086

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	3.55560	0.00517	0.10266	0.04818	0.00104	0.01506	0.01878	0.04657	0.00334
#2	3.53686	-0.00032	0.10195	0.04811	0.00138	0.01831	0.01808	0.04674	0.00317
Mean	3.54623	0.00242	0.10230	0.04814	0.00121	0.01669	0.01843	0.04666	0.00325
%RSD	0.37358	160.18339	0.49391	0.10097	19.51028	13.74351	2.68003	0.25991	3.58649

	Pb calc	Se calc
#1	0.01024	0.00069
#2	0.00996	-0.00517
Mean	0.01010	-0.00224
%RSD	1.95255	185.09488

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 19:14:05
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:22

[CV]

Position : STD1

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.19450	50.08830	0.52107	0.97982	0.99468	0.49466	0.49959	50.20529	0.49677
#2	0.19386	50.40800	0.51618	0.98038	1.00103	0.49720	0.51158	50.40040	0.50034
Mean	0.19418	50.24815	0.51862	0.98010	0.99786	0.49593	0.50558	50.30285	0.49856
%RSD	0.23269	0.44990	0.66703	0.03981	0.44964	0.36166	1.67703	0.27427	0.50606

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48757	0.98196	0.99434	19.93023	48.38374	0.51511	49.88872	0.97181	0.97496
#2	0.48848	0.98549	1.00183	20.04094	48.61855	0.51762	50.10804	0.97838	0.97660
Mean	0.48802	0.98373	0.99808	19.98559	48.50114	0.51637	49.99838	0.97509	0.97578
%RSD	0.13127	0.25436	0.53050	0.39169	0.34233	0.34381	0.31017	0.47678	0.11865

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	48.02044	0.96639	4.74538	0.98289	0.96805	5.15810	0.47950	1.01788	0.97375
#2	48.23554	0.96758	4.77176	0.98787	0.98209	5.15810	0.47654	1.02756	1.01713
Mean	48.12799	0.96698	4.75857	0.98538	0.97507	5.15810	0.47802	1.02272	0.99544
%RSD	0.31603	0.08655	0.39203	0.35770	1.01858	0.00000	0.43751	0.66919	3.08154

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	4.93296	1.02782	0.48617	0.50193	0.51072	4.84169	0.48567	1.00369	0.96600
#2	4.97214	1.03806	0.48826	0.50533	0.49351	4.86432	0.48820	1.00920	0.97059
Mean	4.95255	1.03294	0.48722	0.50363	0.50212	4.85301	0.48694	1.00644	0.96829
%RSD	0.55943	0.70138	0.30262	0.47768	2.42377	0.32969	0.36846	0.38710	0.33525

	Pb calc	Se calc
#1	0.97299	0.98845
#2	0.98402	1.02060
Mean	0.97850	1.00452
%RSD	0.79696	2.26367

Method : Paragon2
SampleId1 : CCB
Analysis commenced : 3/11/2013 19:15:56
Dilution ratio : 1.00000 to 1.00000

File : 130311A
SampleId2 :

Printed : 3/12/2013 13:06:22
[CB]

Position : STD2

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00023	0.00391	-0.00642	-0.00770	-0.00051	-0.00022	0.00757	-0.06460	-0.00024
#2	-0.00103	-0.00147	-0.00817	-0.00782	-0.00051	-0.00026	0.00075	-0.06710	-0.00025
Mean	-0.00063	0.00122	-0.00729	-0.00776	-0.00051	-0.00024	0.00416	-0.06585	-0.00025
%RSD	89.00447	311.35095	16.95039	1.11790	0.00000	9.60573	116.06647	2.68333	0.73241

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	-0.00070	-0.00070	-0.00121	0.00852	-0.11907	-0.00269	-0.01813	-0.00052	-0.00071
#2	-0.00120	-0.00064	-0.00159	0.00766	-0.11743	-0.00272	-0.02058	-0.00046	-0.00178
Mean	-0.00095	-0.00067	-0.00140	0.00809	-0.11825	-0.00270	-0.01936	-0.00049	-0.00124
%RSD	37.04437	5.55771	19.44421	7.48748	0.98394	0.61429	8.96427	8.62035	60.73015

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
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#1	0.01538	-0.00090	-0.00653	0.00107	-0.00179	-0.01408	-0.00121	-0.00188	0.00014
#2	0.01366	-0.00285	-0.01566	-0.00016	0.00056	0.00084	-0.00148	-0.00792	0.00199
Mean	0.01452	-0.00187	-0.01109	0.00045	-0.00062	-0.00662	-0.00135	-0.00490	0.00107
%RSD	8.36944	73.69300	58.21041	192.75199	268.71876	159.45201	14.18031	87.11861	122.56426

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01051	-0.00209	-0.00400	-0.00279	0.00589	-0.02743	0.00020	-0.00179	0.00005
#2	0.00994	0.00084	-0.00400	-0.00285	-0.00436	-0.01967	-0.00049	-0.00230	-0.00011
Mean	0.01022	-0.00063	-0.00400	-0.00282	0.00076	-0.02355	-0.00014	-0.00204	-0.00003
%RSD	3.98298	329.55951	0.00000	1.34173	952.40659	23.29638	340.88936	17.79878	390.51790

	Pb	Se
	calc	calc
#1	-0.00084	-0.00053
#2	0.00032	-0.00131
Mean	-0.00026	-0.00092
%RSD	312.44323	59.71792

Method : Paragon2 File : 130311A
SampleId1 : 1303057-2 5X **SampleId2 :**
Analysis commenced : 3/11/2013 19:17:48
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:22
[SAMPLE]
Position : TUBE111

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00016	7.96628	0.01421	-0.00494	0.19742	0.00061	0.00025	18.39890	-0.00017
#2	-0.00031	7.89307	0.01433	-0.00402	0.19541	0.00059	0.00393	18.27186	-0.00047
Mean	-0.00008	7.92968	0.01427	-0.00448	0.19641	0.00060	0.00209	18.33538	-0.00032
%RSD	425.78143	0.65285	0.57758	14.52833	0.72305	2.47025	124.76053	0.48994	67.38514

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00343	0.00469	0.00810	16.42167	1.64208	0.00512	4.61133	0.41713	0.00055
#2	0.00411	0.00499	0.00894	16.29834	1.64185	0.00509	4.57783	0.41404	0.00092
Mean	0.00377	0.00484	0.00852	16.36001	1.64196	0.00510	4.59458	0.41559	0.00074
%RSD	12.66441	4.43839	6.97256	0.53304	0.01015	0.47019	0.51567	0.52645	36.24270

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.06064	0.00439	0.57454	0.02832	0.03018	2.91717	-0.00485	0.08454	0.09197
#2	0.06015	0.00533	0.55739	0.03297	0.02806	2.87978	-0.00156	0.09829	0.08966
Mean	0.06039	0.00486	0.56597	0.03064	0.02912	2.89847	-0.00320	0.09141	0.09082
%RSD	0.57518	13.72083	2.14284	10.72957	5.16911	0.91192	72.72837	10.63859	1.79952

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.67105	-0.00104	0.03566	0.03416	-0.00268	0.37958	0.26583	0.04880	0.00567

#2	3.64696	-0.00067	0.03523	0.03424	-0.00345	0.38736	0.26325	0.04743	0.00600
Mean	3.65900	-0.00085	0.03544	0.03420	-0.00306	0.38347	0.26454	0.04811	0.00584
%RSD	0.46548	30.28565	0.86235	0.15795	17.71977	1.43505	0.68788	2.01632	4.01470
	Pb	Se							
	calc	calc							
#1	0.02956	0.08950							
#2	0.02969	0.09253							
Mean	0.02963	0.09102							
%RSD	0.30643	2.36051							

Method : Paragon2 File : 130311A
SampleId1 : 1303057-3 5X SampleId2 :
Analysis commenced : 3/11/2013 19:19:34
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:22

[SAMPLE]

Position : TUBE112

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00001	6.57538	0.01351	-0.00432	0.26930	0.00036	0.00180	16.43728	0.00003
#2	-0.00026	6.55720	0.01270	-0.00580	0.26798	0.00034	0.00110	16.37686	-0.00048
Mean	-0.00013	6.56629	0.01310	-0.00506	0.26864	0.00035	0.00145	16.40707	-0.00023
%RSD	156.09685	0.19574	4.40266	20.56881	0.34617	3.48547	34.12044	0.26041	157.46417

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00349	0.00321	0.00541	16.84198	1.93599	0.00524	3.60605	0.36365	0.00268
#2	0.00317	0.00335	0.00636	16.80078	1.92750	0.00521	3.60513	0.36234	0.00281
Mean	0.00333	0.00328	0.00589	16.82138	1.93175	0.00522	3.60559	0.36300	0.00275
%RSD	6.75512	2.98688	11.37097	0.17320	0.31065	0.45938	0.01808	0.25489	3.23574

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05204	0.00401	0.53956	0.02903	0.02615	4.36831	0.00006	0.07941	0.07767
#2	0.05184	0.00401	0.55282	0.02731	0.02607	4.32714	-0.00073	0.08504	0.08243
Mean	0.05194	0.00401	0.54619	0.02817	0.02611	4.34772	-0.00033	0.08222	0.08005
%RSD	0.27863	0.00000	1.71704	4.33343	0.22690	0.66945	168.61588	4.84250	4.19824

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.45680	-0.00469	0.04690	0.03242	-0.00592	0.33165	0.21478	0.03731	0.00361
#2	3.44876	-0.00323	0.04656	0.03243	0.00074	0.32648	0.21294	0.03594	0.00378
Mean	3.45278	-0.00396	0.04673	0.03242	-0.00259	0.32906	0.21386	0.03662	0.00370
%RSD	0.16479	26.11984	0.51194	0.01666	182.13611	1.11007	0.60882	2.64877	3.25097

	Pb	Se
	calc	calc
#1	0.02711	0.07825
#2	0.02648	0.08329

Mean 0.02680 0.08077ser: STEVE WORKMAN
%RSD 1.66452 4.41663

Method : Paragon2 File : 130311A
SampleId1 : 1303057-4 5X SampleId2 :
Analysis commenced : 3/11/2013 19:21:22
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:22
[SAMPLE]

Position : TUBE113

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00068	5.88429	0.00815	-0.00807	0.40027	0.00027	-0.00142	15.70422	-0.00039
#2	-0.00013	5.86237	0.01316	-0.00721	0.39680	0.00025	-0.00212	15.62172	-0.00012
Mean	-0.00040	5.87333	0.01066	-0.00764	0.39854	0.00026	-0.00177	15.66297	-0.00025
%RSD	96.79433	0.26392	33.25709	7.95101	0.61619	7.55190	27.93190	0.37248	75.77795
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00207	0.00136	0.00368	12.39572	0.98258	0.00419	2.32638	0.40541	0.00061
#2	0.00288	0.00140	0.00376	12.33094	0.98258	0.00417	2.31563	0.40375	-0.00021
Mean	0.00248	0.00138	0.00372	12.36333	0.98258	0.00418	2.32101	0.40458	0.00020
%RSD	23.11389	1.68898	1.63480	0.37051	0.00000	0.39749	0.32744	0.29116	286.70640
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.03702	0.00066	0.36444	0.02137	0.02381	1.87090	-0.00414	0.07940	0.08147
#2	0.03719	0.00105	0.37541	0.02320	0.02305	1.85223	-0.00507	0.08051	0.08023
Mean	0.03710	0.00086	0.36993	0.02229	0.02343	1.86157	-0.00460	0.07996	0.08085
%RSD	0.31197	32.55074	2.09701	5.80803	2.29943	0.70940	14.25754	0.97954	1.08819
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.78954	-0.00248	0.03866	0.02068	-0.00094	0.18243	0.24177	0.02548	0.00461
#2	2.78353	0.00008	0.03832	0.02036	-0.00263	0.19084	0.24044	0.02531	0.00505
Mean	2.78653	-0.00120	0.03849	0.02052	-0.00179	0.18664	0.24110	0.02539	0.00483
%RSD	0.15241	150.43717	0.62151	1.10581	67.04324	3.18943	0.39012	0.47754	6.40450
	Pb calc	Se calc							
#1	0.02300	0.08078							
#2	0.02310	0.08032							
Mean	0.02305	0.08055							
%RSD	0.31107	0.40472							

Method : Paragon2 File : 130311A
SampleId1 : 1303057-5 5X SampleId2 :
Analysis commenced : 3/11/2013 19:23:09
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:23
[SAMPLE]

Position : TUBE114

Final concentrations6:32 User: STEVE WORKMAN

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00046	6.31562	0.01036	-0.00684	0.28884	0.00050	-0.00012	16.36825	-0.00005
#2	0.00016	6.28112	0.00955	-0.00745	0.28694	0.00048	-0.00170	16.30800	-0.00083
Mean	-0.00015	6.29837	0.00996	-0.00715	0.28789	0.00049	-0.00091	16.33812	-0.00044
%RSD	289.73404	0.38726	5.79420	6.06926	0.46663	1.93998	122.12235	0.26079	124.05716

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00314	0.00178	0.00473	12.48527	0.73590	0.00493	2.22873	0.42291	0.00048
#2	0.00273	0.00192	0.00474	12.44861	0.74390	0.00491	2.21860	0.42124	0.00162
Mean	0.00294	0.00185	0.00474	12.46694	0.73990	0.00492	2.22367	0.42207	0.00105
%RSD	9.85353	5.42619	0.15023	0.20791	0.76472	0.22501	0.32223	0.27913	76.18687

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.06764	0.00140	0.33930	0.02575	0.02083	1.66175	-0.00138	0.15059	0.14619
#2	0.06743	0.00042	0.33747	0.02384	0.02272	1.62440	-0.00150	0.14055	0.14565
Mean	0.06754	0.00091	0.33839	0.02480	0.02178	1.64308	-0.00144	0.14557	0.14592
%RSD	0.21433	76.48663	0.38204	5.44343	6.15149	1.60720	6.26739	4.88015	0.25912

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.77275	0.00337	0.06117	0.01806	0.00180	0.45078	0.41051	0.02153	0.00689
#2	2.76613	0.00191	0.06078	0.01795	-0.00144	0.44044	0.40913	0.02205	0.00698
Mean	2.76944	0.00264	0.06097	0.01800	0.00018	0.44561	0.40982	0.02179	0.00694
%RSD	0.16915	39.18641	0.44690	0.42007	1241.49420	1.64083	0.23845	1.66933	0.92187

	Pb calc	Se calc
#1	0.02247	0.14765
#2	0.02310	0.14395
Mean	0.02278	0.14580
%RSD	1.94862	1.79545

Method : Paragon2 File : 130311A
SampleId1 : 1303057-6 5X SampleId2 :
Analysis commenced : 3/11/2013 19:24:56
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:23
[SAMPLE]
Position : TUBE115

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00059	4.25691	0.01211	-0.00800	0.10002	0.00085	-0.00301	15.30960	-0.00060
#2	-0.00077	4.19446	0.00559	-0.00782	0.09845	0.00081	-0.00739	15.16744	-0.00053
Mean	-0.00068	4.22569	0.00885	-0.00791	0.09923	0.00083	-0.00520	15.23852	-0.00057
%RSD	18.81211	1.04512	52.15359	1.64436	1.11832	2.67167	59.50529	0.65968	9.19964

ted: 3/12/2013 13:06:32 User: STEVE WORKMAN

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00177	0.00027	0.00192	11.63385	0.72389	0.00222	1.58522	0.31055	0.00734
#2	0.00204	0.00016	0.00202	11.52122	0.72742	0.00220	1.56680	0.30823	0.00746
Mean	0.00191	0.00021	0.00197	11.57753	0.72566	0.00221	1.57601	0.30939	0.00740
%RSD	9.99193	36.73173	3.67672	0.68787	0.34399	0.58506	0.82638	0.52990	1.20149

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03379	-0.00030	0.38684	0.02876	0.03285	5.54381	0.00066	0.07342	0.07648
#2	0.03350	0.00101	0.37678	0.03224	0.03007	5.45018	0.00053	0.07767	0.07752
Mean	0.03365	0.00035	0.38181	0.03050	0.03146	5.49699	0.00060	0.07554	0.07700
%RSD	0.60203	263.48879	1.86249	8.08015	6.25933	1.20438	15.31058	3.98098	0.95496

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.58050	-0.00139	0.03133	0.02717	-0.00413	1.40872	0.62370	0.01570	0.01294
#2	2.54795	0.00300	0.03080	0.02689	-0.00323	1.40034	0.61938	0.01433	0.01307
Mean	2.56423	0.00080	0.03106	0.02703	-0.00368	1.40453	0.62154	0.01502	0.01300
%RSD	0.89762	387.73846	1.19775	0.71935	17.37884	0.42227	0.49113	6.45915	0.67955

	Pb	Se
	calc	calc
#1	0.03149	0.07546
#2	0.03079	0.07757
Mean	0.03114	0.07652
%RSD	1.58243	1.94979

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:23

SampleId1 : 1303057-7 5X

SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 19:26:44

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : TUBE116

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00131	5.36126	0.01596	-0.00561	0.23434	0.00091	0.00798	16.42070	-0.00048
#2	-0.00034	5.36409	0.01036	-0.00696	0.23379	0.00088	0.00097	16.41337	-0.00011
Mean	0.00049	5.36268	0.01316	-0.00629	0.23407	0.00089	0.00447	16.41704	-0.00030
%RSD	240.36559	0.03733	30.05602	15.17600	0.16551	1.90080	110.85325	0.03159	88.12828

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00372	0.00284	0.00341	13.41678	0.75355	0.00345	2.10130	0.37002	0.00312
#2	0.00249	0.00205	0.00325	13.41979	0.74884	0.00346	2.07950	0.37008	0.00017
Mean	0.00311	0.00245	0.00333	13.41829	0.75119	0.00345	2.09040	0.37005	0.00165
%RSD	27.81737	22.78851	3.30188	0.01588	0.44308	0.21370	0.73742	0.01137	126.81743

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.03592	0.00230	0.44353	0.03705	0.02550	4.73507	0.00179	0.15284	0.13407
#2	0.03612	0.00024	0.45199	0.03294	0.02822	4.71262	-0.00099	0.14882	0.13980
Mean	0.03602	0.00127	0.44776	0.03499	0.02686	4.72385	0.00040	0.15083	0.13693
%RSD	0.40169	114.39930	1.33577	8.30092	7.17420	0.33617	490.87134	1.88418	2.96022

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	2.80443	0.00080	0.03776	0.03050	0.00211	1.22925	0.59159	0.02068	0.01146
#2	2.80288	-0.00176	0.03758	0.03083	0.00185	1.19562	0.59131	0.02068	0.01097
Mean	2.80365	-0.00048	0.03767	0.03066	0.00198	1.21244	0.59145	0.02068	0.01122
%RSD	0.03916	374.18954	0.35278	0.75744	9.16529	1.96142	0.03405	0.00000	3.12236

	Pb	Se
	calc	calc
#1	0.02934	0.14032
#2	0.02979	0.14280
Mean	0.02957	0.14156
%RSD	1.07584	1.24137

Method : Paragon2 File : 130311A
SampleId1 : 1303057-8 5X SampleId2 :
Analysis commenced : 3/11/2013 19:28:31
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:23
[SAMPLE]
Position : TUBE117

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00111	9.18204	0.01106	-0.00623	0.28278	0.00086	-0.00178	15.74038	-0.00026
#2	-0.00010	9.20165	0.02051	-0.00641	0.28267	0.00086	0.00137	15.75520	0.00001
Mean	-0.00061	9.19184	0.01578	-0.00632	0.28272	0.00086	-0.00021	15.74779	-0.00013
%RSD	117.97169	0.15088	42.29278	2.05941	0.02741	0.51148	1082.19002	0.06652	148.87988

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00568	0.00423	0.00830	27.36224	1.61993	0.00628	4.02304	0.48451	0.00048
#2	0.00617	0.00498	0.00838	27.40622	1.62158	0.00629	4.03564	0.48522	-0.00014
Mean	0.00592	0.00461	0.00834	27.38423	1.62076	0.00628	4.02934	0.48487	0.00017
%RSD	5.92504	11.42174	0.68597	0.11355	0.07196	0.11753	0.22112	0.10419	261.29123

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05491	0.00629	0.48285	0.03372	0.03981	12.30554	0.00135	0.13525	0.14015
#2	0.05536	0.00620	0.48125	0.04187	0.03811	12.41469	-0.00051	0.13595	0.13540
Mean	0.05513	0.00625	0.48205	0.03779	0.03896	12.36012	0.00042	0.13560	0.13777
%RSD	0.57751	0.99208	0.23476	15.25061	3.07497	0.62443	310.34080	0.36518	2.44034

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
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	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.98865	0.00152	0.05533	0.03360	-0.00291	0.65115	0.42150	0.05635	0.00863
#2	3.99294	-0.00396	0.05538	0.03388	0.00117	0.66472	0.42208	0.05497	0.00894
Mean	3.99080	-0.00122	0.05535	0.03374	-0.00087	0.65793	0.42179	0.05566	0.00878
%RSD	0.07597	318.27058	0.06003	0.59228	331.58296	1.45871	0.09731	1.74302	2.54612

	Pb calc	Se calc
#1	0.03778	0.13852
#2	0.03936	0.13558
Mean	0.03857	0.13705
%RSD	2.90416	1.51600

Method : Paragon2 File : 130311A
SampleId1 : 1303057-10 5X SampleId2 :
Analysis commenced : 3/11/2013 19:30:19
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:23

[SAMPLE]

Position : TUBE118

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00052	3.42166	0.01817	-0.00782	0.13626	0.00094	-0.00124	15.43618	-0.00060
#2	-0.00088	3.40874	0.01538	-0.00776	0.13564	0.00091	-0.00457	15.41835	-0.00021
Mean	-0.00070	3.41520	0.01678	-0.00779	0.13595	0.00093	-0.00290	15.42727	-0.00040
%RSD	36.28031	0.26750	11.79111	0.55675	0.32278	1.79668	81.12122	0.08174	69.54821

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00220	0.00097	0.00236	11.66172	0.30793	0.00119	1.07355	0.32809	0.06919
#2	0.00228	0.00100	0.00247	11.67160	0.30981	0.00119	1.06803	0.32791	0.06963
Mean	0.00224	0.00099	0.00241	11.66666	0.30887	0.00119	1.07079	0.32800	0.06941
%RSD	2.74276	2.34734	3.33172	0.05984	0.43077	0.00000	0.36480	0.03845	0.44829

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.03710	0.00057	0.21592	0.02758	0.02336	3.17512	-0.00283	0.27526	0.26648
#2	0.03665	0.00046	0.21911	0.02618	0.02238	3.18633	-0.00124	0.27703	0.27805
Mean	0.03688	0.00052	0.21751	0.02688	0.02287	3.18072	-0.00203	0.27614	0.27226
%RSD	0.86315	14.97994	1.03974	3.66666	3.01063	0.24935	55.09634	0.45305	3.00418

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.20221	0.00337	0.02840	0.02233	-0.00251	1.53807	0.72730	0.01433	0.00740
#2	2.19887	-0.00249	0.02829	0.02360	-0.00681	1.51802	0.72650	0.01416	0.00723
Mean	2.20054	0.00044	0.02834	0.02296	-0.00466	1.52805	0.72690	0.01425	0.00732
%RSD	0.10721	941.87056	0.25785	3.92812	65.23569	0.92790	0.07781	0.85112	1.62204

	Pb calc	Se calc
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#1	0.02476	0.26940
#2	0.02365	0.27771
Mean	0.02421	0.27356
%RSD	3.25322	2.14662

ser: STEVE WORKMAN

Method : Paragon2 File : 130311A
SampleId1 : 1303057-11 5X SampleId2 :
Analysis commenced : 3/11/2013 19:32:06
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:24
[SAMPLE]

Position : TUBE119

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	-0.00013	2.99930	0.01328	-0.00966	0.09845	0.00084	0.00357	18.66919	-0.00084
#2	-0.00065	2.99754	0.01386	-0.00880	0.09815	0.00080	-0.00256	18.64777	-0.00024
Mean	-0.00039	2.99842	0.01357	-0.00923	0.09830	0.00082	0.00051	18.65848	-0.00054
%RSD	93.72254	0.04143	3.03671	6.57747	0.21003	3.60720	857.62779	0.08118	79.17538

	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.00201	0.00024	0.00251	10.47488	0.30558	0.00081	0.94374	0.41047	0.02148
#2	0.00219	0.00038	0.00213	10.46293	0.29946	0.00081	0.94527	0.41023	0.02274
Mean	0.00210	0.00031	0.00232	10.46891	0.30252	0.00081	0.94450	0.41035	0.02211
%RSD	6.05632	30.21030	11.59080	0.08076	1.42937	0.00000	0.11487	0.04101	4.02110

	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	0.03080	-0.00041	0.23876	0.02184	0.02412	3.16016	-0.00335	0.25938	0.25544
#2	0.03105	-0.00013	0.23579	0.02160	0.02301	3.11156	0.00009	0.26970	0.26135
Mean	0.03092	-0.00027	0.23728	0.02172	0.02356	3.13586	-0.00163	0.26454	0.25840
%RSD	0.56141	74.14285	0.88511	0.76459	3.31929	1.09595	149.06202	2.75856	1.61796

	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	2.07534	0.00593	0.03219	0.02045	-0.00221	1.18516	0.70442	0.01142	0.00716
#2	2.07824	0.00191	0.03218	0.02066	-0.00245	1.18904	0.70344	0.00970	0.00751
Mean	2.07679	0.00392	0.03219	0.02055	-0.00233	1.18710	0.70393	0.01056	0.00733
%RSD	0.09869	72.63562	0.02064	0.73584	7.30656	0.23127	0.09804	11.48267	3.33993

	Pb calc	Se calc
#1	0.02336	0.25675
#2	0.02254	0.26413
Mean	0.02295	0.26044
%RSD	2.51419	2.00375

Method : Paragon2 File : 130311A
SampleId1 : 1303057-12 5X SampleId2 :
Analysis commenced : 3/11/2013 19:33:54

Printed : 3/12/2013 13:06:24
[SAMPLE]

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : TUBE120

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00061	16.69770	0.01305	-0.00083	0.16156	0.00110	0.00899	5.24522	0.00057
#2	0.00154	16.77629	0.01211	-0.00107	0.16193	0.00107	0.01092	5.26000	0.00070
Mean	0.00108	16.73699	0.01258	-0.00095	0.16174	0.00109	0.00995	5.25261	0.00063
%RSD	60.73214	0.33201	5.24141	18.24041	0.15961	2.05233	13.71105	0.19897	15.27348
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01386	0.01647	0.02010	30.90949	5.20892	0.01070	5.65122	0.48528	0.00048
#2	0.01355	0.01702	0.02028	31.04358	5.23141	0.01074	5.66536	0.48725	-0.00102
Mean	0.01370	0.01674	0.02019	30.97654	5.22017	0.01072	5.65829	0.48626	-0.00027
%RSD	1.63603	2.34346	0.63305	0.30608	0.30475	0.24106	0.17680	0.28569	395.23490
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08910	0.01773	0.57935	0.03426	0.01709	0.90383	0.00460	0.01715	-0.00001
#2	0.08926	0.01822	0.58964	0.03635	0.01811	0.91502	0.00247	0.00231	0.00063
Mean	0.08918	0.01797	0.58449	0.03531	0.01760	0.90943	0.00353	0.00973	0.00031
%RSD	0.12989	1.89688	1.24502	4.17775	4.07338	0.87066	42.58054	107.81064	146.82382
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.08534	0.00003	0.05342	0.05749	-0.00089	0.04069	0.04519	0.08121	0.00898
#2	4.10987	0.00515	0.05353	0.05806	0.01064	0.04843	0.04476	0.08139	0.00926
Mean	4.09760	0.00259	0.05348	0.05777	0.00487	0.04456	0.04497	0.08130	0.00912
%RSD	0.42344	139.59200	0.14912	0.70115	167.16781	12.27465	0.68089	0.14918	2.11574
	Pb	Se							
	calc	calc							
#1	0.02281	0.00570							
#2	0.02418	0.00119							
Mean	0.02350	0.00344							
%RSD	4.12561	92.67314							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:24

SampleId1 : CCV

SampleId2 :

[CV]

Analysis commenced : 3/11/2013 19:35:41

Dilution ratio : 1.00000 to 1.00000

Tray :

Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19451	50.38181	0.51233	0.98136	1.00429	0.49518	0.52056	50.25025	0.50127
#2	0.19314	50.16758	0.51187	0.97823	0.99765	0.49303	0.50540	49.94554	0.49824

Mean	0.19383	50.27470	0.51210	0.97979	1.00097	0.49410	0.51298	50.09790	0.49976
%RSD	0.49941	0.30130	0.06434	0.22564	0.46897	0.30764	2.08863	0.43008	0.42940
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48668	0.98172	1.00567	19.98338	48.72282	0.51930	49.91319	0.97426	0.97931
#2	0.48464	0.97837	0.99798	19.89809	48.49926	0.51661	49.74190	0.97055	0.97294
Mean	0.48566	0.98005	1.00183	19.94074	48.61104	0.51796	49.82755	0.97240	0.97613
%RSD	0.29699	0.24189	0.54247	0.30241	0.32520	0.36759	0.24309	0.26947	0.46075
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.32342	0.97196	4.77315	0.97776	0.96555	5.19554	0.48191	1.00908	0.98682
#2	48.10916	0.96080	4.74445	0.97263	0.97692	5.16185	0.47637	1.01031	1.00831
Mean	48.21629	0.96638	4.75880	0.97520	0.97123	5.17870	0.47914	1.00970	0.99756
%RSD	0.31423	0.81631	0.42640	0.37190	0.82719	0.46012	0.81826	0.08614	1.52337
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.95910	1.02928	0.48896	0.50357	0.51124	4.87080	0.48562	1.00386	0.97053
#2	4.94371	1.02599	0.48579	0.50162	0.50477	4.85852	0.48343	1.00024	0.96557
Mean	4.95141	1.02763	0.48737	0.50259	0.50801	4.86466	0.48453	1.00205	0.96805
%RSD	0.21979	0.22654	0.45995	0.27475	0.90004	0.17848	0.31946	0.25514	0.36250
	Pb	Se							
	calc	calc							
#1	0.96962	0.99423							
#2	0.97549	1.00898							
Mean	0.97255	1.00160							
%RSD	0.42681	1.04091							

Method : Paragon2
SampleId1 : CCB
Analysis commenced : 3/11/2013 19:37:32
Dilution ratio : 1.00000 to 1.00000

File : 130311A

SampleId2 :

Tray :

Printed : 3/12/2013 13:06:24

[CB]

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00019	-0.00225	-0.00152	-0.00899	-0.00069	-0.00029	-0.00066	-0.06741	-0.00058
#2	-0.00126	-0.00395	0.00232	-0.00880	-0.00062	-0.00035	-0.00258	-0.06819	-0.00016
Mean	-0.00072	-0.00310	0.00040	-0.00889	-0.00065	-0.00032	-0.00162	-0.06780	-0.00037
%RSD	104.10183	38.79216	681.23527	1.46292	7.90129	12.14422	84.15542	0.81439	80.76787
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00138	-0.00132	-0.00187	0.00790	-0.11437	-0.00272	-0.02273	-0.00058	-0.00115
#2	-0.00084	-0.00079	-0.00139	0.00681	-0.11931	-0.00273	-0.02242	-0.00058	-0.00153
Mean	-0.00111	-0.00106	-0.00163	0.00735	-0.11684	-0.00273	-0.02258	-0.00058	-0.00134

%RSD	34.65392	35.26415	20.73485	10.48866	2.98746	0.47412	0.96068	0.00000	19.92428
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	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01415	-0.00223	-0.00972	-0.00440	0.00277	-0.02154	-0.00239	-0.00229	-0.00303
#2	0.01247	-0.00129	-0.01543	0.00045	0.00007	-0.01781	-0.00122	-0.00628	0.00199
Mean	0.01331	-0.00176	-0.01258	-0.00197	0.00142	-0.01967	-0.00181	-0.00428	-0.00052
%RSD	8.91082	37.81874	32.08870	173.96132	134.58817	13.40771	46.08886	65.89137	684.64371

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00751	-0.00099	-0.00403	-0.00262	0.00088	-0.02097	-0.00049	-0.00196	-0.00031
#2	0.00967	0.00120	-0.00400	-0.00275	-0.00115	-0.02873	-0.00106	-0.00230	-0.00020
Mean	0.00859	0.00010	-0.00401	-0.00269	-0.00013	-0.02485	-0.00077	-0.00213	-0.00025
%RSD	17.74718	1498.94816	0.49677	3.41589	1077.32856	22.08290	52.51599	11.38809	30.55343

	Pb	Se
	calc	calc
#1	0.00038	-0.00278
#2	0.00020	-0.00076
Mean	0.00029	-0.00177
%RSD	44.69831	80.54099

Method : Paragon2 File : 130311A
SampleId1 : 1303057-13 5X SampleId2 :
Analysis commenced : 3/11/2013 19:39:22
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:24
[SAMPLE]

Position : TUBE121

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00020	19.24837	0.01491	-0.00193	0.20275	0.00111	0.00127	25.02643	-0.00009
#2	-0.00100	19.14400	0.01351	-0.00199	0.20136	0.00111	0.00530	24.92639	-0.00026
Mean	-0.00060	19.19619	0.01421	-0.00196	0.20205	0.00111	0.00328	24.97641	-0.00018
%RSD	95.21734	0.38443	6.95935	2.20927	0.48563	0.03785	86.79743	0.28321	72.31451

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01200	0.01726	0.02569	35.70120	4.29822	0.01494	8.64019	0.42481	-0.00102
#2	0.01164	0.01708	0.02502	35.59465	4.28072	0.01487	8.60538	0.42416	-0.00046
Mean	0.01182	0.01717	0.02535	35.64792	4.28947	0.01490	8.62279	0.42448	-0.00074
%RSD	2.17571	0.76795	1.88909	0.21135	0.28852	0.30957	0.28538	0.10904	53.96019

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.08299	0.02034	0.71705	0.02618	0.02358	2.76765	0.00207	0.00200	0.00127
#2	0.08267	0.01940	0.69989	0.02835	0.02333	2.74896	0.00115	0.00449	0.00443
Mean	0.08283	0.01987	0.70847	0.02727	0.02345	2.75831	0.00161	0.00324	0.00285
%RSD	0.27967	3.35380	1.71253	5.60908	0.75665	0.47908	40.25854	54.33928	78.27625

ted: 3/12/2013 13:06:32 User: STEVE WORKMAN

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	3.89478	-0.00105	0.09282	0.04659	-0.00041	0.00491	0.04259	0.09922	0.00811
#2	3.88013	0.00078	0.09214	0.04665	-0.00021	0.02368	0.04254	0.09837	0.00826
Mean	3.88745	-0.00014	0.09248	0.04662	-0.00031	0.01429	0.04257	0.09880	0.00818
%RSD	0.26637	945.98742	0.51759	0.08110	44.16453	92.85896	0.08152	0.61385	1.30779

	Pb	Se
	calc	calc
#1	0.02445	0.00151
#2	0.02500	0.00445
Mean	0.02472	0.00298
%RSD	1.58116	69.60361

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:24

SampleId1 : 1303057-14 5X SampleId2 :

[SAMPLE]

Analysis commenced : 3/11/2013 19:41:08

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : TUBE122

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00083	14.35711	0.01386	0.00095	0.17153	0.00063	-0.00154	63.95312	-0.00009
#2	-0.00053	14.29904	0.00920	0.00070	0.17014	0.00066	0.00058	63.76565	0.00006
Mean	-0.00068	14.32807	0.01153	0.00083	0.17083	0.00064	-0.00048	63.85939	-0.00002
%RSD	31.72748	0.28660	28.59134	20.96121	0.57428	3.59556	310.92286	0.20758	553.90498

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00781	0.01065	0.01516	25.03710	2.73206	0.01296	12.85483	0.37930	-0.00134
#2	0.00867	0.01150	0.01645	24.94380	2.74032	0.01295	12.81071	0.37793	-0.00040
Mean	0.00824	0.01107	0.01581	24.99045	2.73619	0.01295	12.83277	0.37861	-0.00087
%RSD	7.34906	5.43651	5.78165	0.26399	0.21347	0.04275	0.24313	0.25551	76.89394

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.07386	0.01374	0.83443	0.02767	0.02381	0.83664	-0.00179	0.00954	0.00690
#2	0.07755	0.01388	0.82734	0.03070	0.02201	0.84037	-0.00153	0.01067	0.00671
Mean	0.07571	0.01381	0.83088	0.02919	0.02291	0.83851	-0.00166	0.01010	0.00681
%RSD	3.44206	0.67333	0.60377	7.34894	5.53380	0.31475	10.90912	7.86947	1.98669

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.62794	-0.00070	0.12118	0.06195	-0.00797	-0.00804	0.03818	0.07024	0.00696
#2	4.61740	0.00515	0.11996	0.06218	0.00178	0.01849	0.03862	0.06887	0.00744
Mean	4.62267	0.00222	0.12057	0.06207	-0.00310	0.00523	0.03840	0.06955	0.00720
%RSD	0.16122	186.15873	0.71146	0.26976	222.52387	358.71049	0.80879	1.39495	4.69072

	Pb	Seser: STEVE WORKMAN
	calc	calc
#1	0.02509	0.00778
#2	0.02491	0.00803
Mean	0.02500	0.00790
%RSD	0.52530	2.20859

Method : Paragon2 File : 130311A
SampleId1 : 1303057-15 5X **SampleId2 :**
Analysis commenced : 3/11/2013 19:42:53
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:25
[SAMPLE]
Position : TUBE123

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	-0.00111	12.64494	0.00652	-0.00169	0.16883	0.00068	-0.00024	5.29176	0.00006
#2	-0.00111	12.62710	0.00757	-0.00163	0.16813	0.00066	0.00046	5.27840	-0.00018
Mean	-0.00111	12.63602	0.00704	-0.00166	0.16848	0.00067	0.00011	5.28508	-0.00006
%RSD	0.10593	0.09988	10.53190	2.61830	0.29115	2.73489	446.80029	0.17882	278.68101

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01050	0.01200	0.02147	27.25234	3.86695	0.00793	4.87633	0.58224	-0.00159
#2	0.01055	0.01188	0.02119	27.19313	3.84662	0.00788	4.85696	0.58087	0.00086
Mean	0.01052	0.01194	0.02133	27.22273	3.85678	0.00791	4.86664	0.58156	-0.00036
%RSD	0.29446	0.68103	0.93226	0.15382	0.37270	0.44338	0.28142	0.16662	475.97898

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.13269	0.01567	0.86533	0.02293	0.02341	0.73960	-0.00207	0.00006	0.00250
#2	0.13174	0.01607	0.87540	0.02293	0.02286	0.73960	-0.00377	0.00610	0.00337
Mean	0.13221	0.01587	0.87036	0.02293	0.02313	0.73960	-0.00292	0.00308	0.00293
%RSD	0.50408	1.75775	0.81818	0.01854	1.68171	0.00000	41.10445	138.76221	21.02155

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	5.13032	-0.00403	0.04543	0.09151	0.00305	-0.01038	0.03494	0.08310	0.00694
#2	5.12367	-0.00476	0.04518	0.09170	-0.00354	-0.01166	0.03545	0.08207	0.00674
Mean	5.12700	-0.00440	0.04531	0.09161	-0.00025	-0.01102	0.03520	0.08259	0.00684
%RSD	0.09172	11.77222	0.39601	0.14738	1899.69310	8.23195	1.01319	0.88113	2.03680

	Pb	Se
	calc	calc
#1	0.02325	0.00168
#2	0.02288	0.00428
Mean	0.02306	0.00298
%RSD	1.13114	61.53923

Method : Paragon2 File : 130311A

Printed : 3/12/2013 13:06:25

SampleId1 : CRI SampleId2 :
 Analysis commenced : 3/11/2013 19:44:39
 Dilution ratio : 1.00000 to 1.00000 Tray :

[CV]
 Position : STD6

Final concentrations

	Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
#1	0.02040	0.40146	0.01421	0.39251	0.41036	0.01157	0.05265	5.08423	0.01110
#2	0.02056	0.38838	0.00722	0.39098	0.41029	0.01147	0.05247	5.05955	0.01111
Mean	0.02048	0.39492	0.01071	0.39174	0.41033	0.01152	0.05256	5.07189	0.01110
%RSD	0.52160	2.34185	46.15284	0.27671	0.01260	0.59351	0.24359	0.34408	0.02760
	Co ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Li ppm	Mg ppm	Mn ppm	Mo ppm
#1	0.10152	0.02135	0.05207	0.19857	3.70812	0.01464	5.14259	0.03127	0.02104
#2	0.10098	0.02064	0.05114	0.19709	3.71285	0.01470	5.11123	0.03104	0.02035
Mean	0.10125	0.02100	0.05160	0.19783	3.71048	0.01467	5.12691	0.03115	0.02069
%RSD	0.37914	2.37436	1.27116	0.52947	0.09007	0.31447	0.43255	0.53851	2.36275
	Na ppm	Ni ppm	P ppm	Pb I ppm	Pb II ppm	S ppm	Sb ppm	Se I ppm	Se II ppm
#1	3.90894	0.08132	0.17548	0.01107	0.00185	0.20975	0.11691	0.01591	0.00818
#2	3.92619	0.07952	0.18325	0.00488	0.00615	0.20601	0.11533	0.01329	0.01620
Mean	3.91756	0.08042	0.17936	0.00798	0.00400	0.20788	0.11612	0.01460	0.01219
%RSD	0.31143	1.58030	3.06182	54.82969	76.18068	1.26899	0.96026	12.71108	46.48943
	Si ppm	Sn ppm	Sr ppm	Ti ppm	Tl ppm	U ppm	V ppm	Zn ppm	Zr ppm
#1	0.11516	0.10105	0.01744	0.01877	0.01911	0.18851	0.10392	0.04091	0.05184
#2	0.11256	0.10251	0.01741	0.01897	0.02865	0.17429	0.10260	0.04040	0.05146
Mean	0.11386	0.10178	0.01743	0.01887	0.02388	0.18140	0.10326	0.04065	0.05165
%RSD	1.61149	1.01651	0.11437	0.71565	28.23153	5.54544	0.90201	0.89484	0.52853
	Pb calc	Se calc							
#1	0.00492	0.01076							
#2	0.00573	0.01523							
Mean	0.00532	0.01299							
%RSD	10.81079	24.33836							

Method : Paragon2 File : 130311A
 SampleId1 : ICSEA SampleId2 :
 Analysis commenced : 3/11/2013 19:46:29
 Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:25
 [ICSAB]
 Position : STD3

Final concentrations

Ag ppm	Al ppm	As ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
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#1	0.00086	265.99020	0.00465	-0.00212	-0.00036	0.00010	0.00883	261.83152	0.00062
#2	-0.00097	265.71607	-0.00420	-0.00457	-0.00073	0.00007	0.00059	260.70562	0.00022
Mean	-0.00006	265.85314	0.00022	-0.00334	-0.00054	0.00008	0.00471	261.26857	0.00042
%RSD	2298.48460	0.07291	2791.34419	51.89170	47.46160	25.81319	123.78857	0.30472	67.76467

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00373	-0.00039	-0.00418	105.60374	-0.20604	-0.00270	266.43916	0.00417	0.00099
#2	0.00251	-0.00195	-0.00668	105.40080	-0.22108	-0.00272	265.75783	0.00340	-0.00190
Mean	0.00312	-0.00117	-0.00543	105.50227	-0.21356	-0.00271	266.09850	0.00378	-0.00046
%RSD	27.70085	93.81569	32.58699	0.13601	4.98046	0.40854	0.18105	14.40897	445.95474

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.05028	0.00143	0.02612	0.03019	-0.02154	0.01949	0.01132	0.01352	-0.00753
#2	0.04983	-0.00085	0.00717	0.01202	-0.00811	0.00830	-0.00239	-0.00988	0.00423
Mean	0.05006	0.00029	0.01665	0.02111	-0.01483	0.01390	0.00447	0.00182	-0.00165
%RSD	0.63602	561.29057	80.49659	60.89474	64.08016	56.93076	217.04763	910.47958	504.51300

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01141	0.00705	-0.00193	-0.00129	0.00242	0.12612	-0.00165	-0.00196	0.00260
#2	0.00539	0.00120	-0.00205	-0.00139	-0.00259	0.08542	-0.00484	-0.00093	0.00169
Mean	0.00840	0.00413	-0.00199	-0.00134	-0.00009	0.10577	-0.00325	-0.00144	0.00214
%RSD	50.65404	100.30768	4.33572	5.64365	4140.49969	27.21134	69.45136	50.39771	30.06178

	Pb	Se
	calc	calc
#1	-0.00432	-0.00052
#2	-0.00141	-0.00047
Mean	-0.00286	-0.00049
%RSD	71.90585	8.21789

Method : Paragon2
SampleId1 : ICSAB
Analysis commenced : 3/11/2013 19:48:19
Dilution ratio : 1.00000 to 1.00000 Tray :

File : 130311A
SampleId2 :

Printed : 3/12/2013 13:06:25
[ICSAB]

Position : STD4

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19864	264.60510	0.11095	0.98087	0.50457	0.50234	0.53308	259.80080	0.99226
#2	0.19931	264.25841	0.10792	0.98289	0.50307	0.50214	0.52571	259.36725	0.98586
Mean	0.19897	264.43175	0.10943	0.98188	0.50382	0.50224	0.52939	259.58403	0.98906
%RSD	0.23944	0.09271	1.95794	0.14569	0.21049	0.02942	0.98510	0.11810	0.45731

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.48332	0.48585	0.53590	105.34254	-0.19335	1.05634	266.25940	0.49308	0.96734

#2	0.48214	0.48564	0.53596	105.31063	-0.19076	1.05529	266.19469	0.49302	0.96400
Mean	0.48273	0.48575	0.53593	105.32659	-0.19206	1.05582	266.22704	0.49305	0.96567
%RSD	0.17293	0.03167	0.00775	0.02142	0.95190	0.07069	0.01719	0.00854	0.24439

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01787	0.94323	0.95483	0.06705	0.03153	1.05687	0.58468	0.05527	0.04486
#2	0.01763	0.94003	0.94911	0.06063	0.03715	1.06807	0.57261	0.05421	0.05049
Mean	0.01775	0.94163	0.95197	0.06384	0.03434	1.06247	0.57865	0.05474	0.04768
%RSD	0.97796	0.24030	0.42513	7.11182	11.55843	0.74533	1.47516	1.37589	8.35379

	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	1.00436	1.02358	0.97252	0.99443	0.10096	9.67177	0.48560	0.97700	0.48490
#2	0.99962	1.02688	0.97023	0.99581	0.10276	9.70803	0.48334	0.98148	0.48473
Mean	1.00199	1.02523	0.97138	0.99512	0.10186	9.68990	0.48447	0.97924	0.48482
%RSD	0.33455	0.22711	0.16693	0.09851	1.24579	0.26464	0.33108	0.32322	0.02447

	Pb	Se
	calc	calc
#1	0.04336	0.04833
#2	0.04497	0.05173
Mean	0.04416	0.05003
%RSD	2.57166	4.80871

Method : Paragon2 File : 130311A
SampleId1 : CCV SampleId2 :
Analysis commenced : 3/11/2013 19:50:10
Dilution ratio : 1.00000 to 1.00000 Tray :

Printed : 3/12/2013 13:06:25
[CV]
Position : STD1

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.19595	50.28779	0.52119	0.98485	0.99894	0.49869	0.51281	50.63008	0.50173
#2	0.19400	50.41697	0.52049	0.98565	1.00011	0.49946	0.51087	50.59423	0.50123
Mean	0.19498	50.35238	0.52084	0.98525	0.99952	0.49907	0.51184	50.61215	0.50148
%RSD	0.70880	0.18140	0.09489	0.05720	0.08303	0.10982	0.26705	0.05009	0.06935

	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.49078	0.98886	1.00051	20.09160	48.48623	0.51582	50.37727	0.97982	0.98176
#2	0.49078	0.98911	1.00070	20.10561	48.61704	0.51708	50.37601	0.98125	0.97641
Mean	0.49078	0.98898	1.00061	20.09861	48.55163	0.51645	50.37664	0.98053	0.97908
%RSD	0.00006	0.01811	0.01349	0.04928	0.19053	0.17294	0.00176	0.10345	0.38659

	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	48.03790	0.97586	4.78055	0.99615	0.95668	5.20303	0.47917	1.01501	0.98017
#2	48.12688	0.97380	4.79976	0.99011	0.98630	5.19554	0.48337	1.01404	1.02265

Mean	48.08239	0.97483	4.79016	0.99313	0.97149	5.19929	0.48127	1.01452	1.00141
%RSD	0.13085	0.14945	0.28357	0.43010	2.15626	0.10185	0.61747	0.06752	2.99953
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	4.96869	1.03733	0.48715	0.50630	0.51746	4.86431	0.48993	1.01953	0.97177
#2	4.97777	1.03733	0.48693	0.50729	0.50437	4.86107	0.48881	1.01798	0.97205
Mean	4.97323	1.03733	0.48704	0.50679	0.51091	4.86269	0.48937	1.01875	0.97191
%RSD	0.12913	0.00008	0.03151	0.13730	1.81167	0.04708	0.16103	0.10756	0.02011
	Pb	Se							
	calc	calc							
#1	0.96982	0.99177							
#2	0.98757	1.01978							
Mean	0.97869	1.00578							
%RSD	1.28230	1.96932							

Method : Paragon2

File : 130311A

Printed : 3/12/2013 13:06:26

SampleId1 : CCB

SampleId2 :

[CB]

Analysis commenced : 3/11/2013 19:52:01

Dilution ratio : 1.00000 to 1.00000 Tray :

Position : STD2

Final concentrations

	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00207	0.01641	0.00209	-0.00432	-0.00018	-0.00025	0.01267	-0.06413	0.00050
#2	0.00122	0.01761	-0.00013	-0.00567	-0.00025	-0.00025	0.00917	-0.06398	0.00005
Mean	0.00164	0.01701	0.00098	-0.00500	-0.00022	-0.00025	0.01092	-0.06405	0.00027
%RSD	36.57309	4.98386	159.45974	19.08607	23.97587	0.58377	22.65801	0.17241	117.21718
	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.00102	0.00057	0.00055	0.01015	-0.09674	-0.00271	-0.00525	-0.00034	-0.00134
#2	0.00075	0.00070	0.00082	0.00930	-0.10544	-0.00271	-0.00279	-0.00040	-0.00046
Mean	0.00088	0.00064	0.00068	0.00973	-0.10109	-0.00271	-0.00402	-0.00037	-0.00090
%RSD	21.66543	13.81083	27.55044	6.22845	6.08380	0.13618	43.16830	11.39988	69.25722
	Na	Ni	P	Pb I	Pb II	S	Sb	Se I	Se II
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01554	0.00022	-0.00721	0.00844	-0.00853	-0.01408	0.00259	0.01162	-0.00003
#2	0.01480	-0.00112	-0.00721	0.00669	-0.00761	-0.01035	0.00299	0.01273	-0.00329
Mean	0.01517	-0.00045	-0.00721	0.00757	-0.00807	-0.01221	0.00279	0.01217	-0.00166
%RSD	3.43218	211.45733	0.00000	16.37374	8.04889	21.59858	10.11509	6.47447	138.51969
	Si	Sn	Sr	Ti	Tl	U	V	Zn	Zr
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
#1	0.01643	0.00413	-0.00388	-0.00229	0.00972	0.00619	0.00137	-0.00110	0.00098
#2	0.01464	0.00047	-0.00388	-0.00285	0.00913	0.02236	0.00109	-0.00093	0.00093
Mean	0.01554	0.00230	-0.00388	-0.00257	0.00943	0.01428	0.00123	-0.00101	0.00096

%RSD	8.16332	112.52882	0.17120	15.36692	4.38596	80.07832	16.47149	11.94778	3.63792
	Pb	Se							
	calc	calc							
#1	-0.00287	0.00385							
#2	-0.00285	0.00204							
Mean	-0.00286	0.00294							
%RSD	0.71503	43.28997							

Header Information for Analytical Sequence 13C08m01

Instrument: Agilent ICPMS Model 7700X; Serial No. JP09400112

Software Revision: B.01.01

Date of Analysis: 03/08/2013

Analyst: Ross Miller

Calibration Standards

High Calibration Standard: ST100324-6 (expires 2/28/2015)

This standard contains the following elements at the listed concentrations (ng/ml).

100000	50000	10000	5000	2000	1000	500	200	100	50	30	10	2
Na	Ca	Mg	Fe	Zn	B	Cr	Mn	V	Pb	Sb	Th	Tl
	K		Al	Ti	Cu	Ni		Co	Be	Cd	U	
					Li	Sn		As		Y	Ag	
								Se		La		
								Mo		Ce		
								Ba		Pr		
								Sr		Nd		

1/10, 1/100, and 1/1000 dilutions of the High Calibration Standard are prepared daily to provide additional calibration standards.

ICV

The ICV is prepared by diluting 1ml of the 2nd Source intermediate (ST121126-2, expires 12/18/2013) to 5ml giving the following concentrations (ng/ml).

20000	10000	2000	1000	400	200	100	40	20	10	6	2	0.4
Na	Ca	Mg	Fe	Zn	B	Cr	Mn	V	Pb	Sb	Th	Tl
	K		Al	Ti	Cu	Ni		Co	Be	Cd	U	
					Li	Sn		As		Y	Ag	
								Se		La		
								Mo		Ce		
								Ba		Pr		
								Sr		Nd		

CRI1

The RL1 is prepared by diluting 0.05ml of the Reporting Limit Verification Spike Solution (ST100324-9 expires 2/28/2015) to 50ml giving the following concentrations (ng/ml).

100	50	10	5	2	1	0.5	0.2	0.1	0.05	0.03	0.02	0.01
Na	Ca	Mg	Al	Zn	B	Cr	Mn	V	Pb	Sb	Th	U
	K		Fe	Ti	Cu	Ni		Co	Be	Cd	Tl	Ag
					Li	Sn		As		Y		
								Se		La		
								Mo		Ce		
								Ba		Pr		
								Sr		Nd		

CRI2

The RL2 is prepared by diluting 0.1ml of the Reporting Limit Verification Spike Solution (ST100324-9 expires 2/28/2015) to 50ml giving the following concentrations (ng/ml).

200	100	20	10	4	2	1	0.4	0.2	0.1	0.06	0.04	0.02
Na	Ca	Mg	Al	Zn	B	Cr	Mn	V	Pb	Sb	Th	U
	K		Fe	Ti	Cu	Ni		Co	Be	Cd	Tl	Ag
					Li	Sn		As		Y		
								Se		La		
								Mo		Ce		
								Ba		Pr		
								Sr		Nd		

ICSA

The ICSA is prepared by diluting 0.5ml of ICSA intermediate (ST121206-1, expires 01/01/14) to a final volume of 50ml giving the following concentrations (ng/ml).

42.5 X 10 ⁶	30000	25000	20000	10000	200
Cl	Ca	Fe	C	Al	Mo
		Na		K	Ti
				Mg	
				P	
				S	

ICSAB

The ICSAB is prepared by diluting 0.5ml of ICSA intermediate (ST121206-1, expires 01/01/14) and 5ml of High Calibration Standard: ST100324-6 (expires 2/28/2015) to a final volume of 50ml. The ICSAB contains the following elements at the listed concentrations (ng/ml).

42.5X10 ⁶	35000	25500	20000	15000	11000	10500	10000	400	210
Cl	Ca	Fe	C	K	Mg	Al	P	Ti	Mo
	Na						S		

200	100	50	20	10	5	3	1	0.2
Zn	B	Cr	Mn	V	Pb	Sb	Th	Tl
	Cu	Ni		Co	Be	Cd	U	
	Li	Sn		As		Y	Ag	
				Se		La		
				Ba		Ce		
				Sr		Pr		
						Nd		

CCV

The CCV is prepared by diluting 5ml of the High Calibration Standard: ST100324-6 (expires 2/28/2015) to a final volume of 50ml. The CCV contains the following elements at the listed concentrations (ng/ml).

10000	5000	1000	500	200	100	50	20	10	5	3	1	0.2
Na	Ca	Mg	Fe	Zn	B	Cr	Mn	V	Pb	Sb	Th	Tl
	K		Al	Ti	Cu	Ni		Co	Be	Cd	U	
					Li	Sn		As		Y	Ag	
								Se		La		
								Mo		Ce		
								Ba		Pr		
								Sr		Nd		

Linear Dynamic Range Standards

LDR-Ca,Na,K

The LDR-Ca,Na,K standard is prepared by diluting 1ml of the High Calibration Standard Intermediate Mix (ST100324-5, expires 2/28/2015) to a final volume of 10ml. The LDR-Ca,Na,K standard contains the following elements at the listed concentrations (ng/ml).

100000	50000	20000	10000	5000	2000	1000	500	300	100	20
Mg	Fe	Zn	B	Cr	Mn	V	Pb	Sb	Th	Tl
	Al	Ti	Cu	Ni		Co	Be	Cd	U	
			Li	Sn		As		Y	Ag	
						Se		La		
						Mo		Ce		
						Ba		Pr		
						Sr		Nd		

1000 Na

The 1000 Na standard is prepared by diluting 1ml of the 10000mg/L Na stock solution (ST100301-26, expires 2/28/2015) to a final volume of 10ml. The 1000 Na standard contains Na at 1000000 ng/ml.

500 Ca

The 500 Ca standard is prepared by diluting 0.5ml of the 10000mg/L Ca stock solution (ST100301-9, expires 2/28/2015) to a final volume of 10ml. The 500 Ca standard contains Ca at 500000 ng/ml.

500 K

The 500 K standard is prepared by diluting 0.5ml of the 10000mg/L K stock solution (ST100301-22, expires 2/28/2015) to a final volume of 10ml. The 500 K standard contains K at 500000 ng/ml.

Linear Dynamic Range

The instrument Linear Dynamic Range (LDR) is determined at least every 6 months. The current LDR was determined on 09/13/2012. The instrument LDR is given below (ng/ml).

1000000	500000	100000	50000	20000	10000	5000	2000	1000	500	300	100	20
Na	Ca	Mg	Fe	Zn	B	Cr	Mn	V	Pb	Sb	Th	Tl
	K		Al	Ti	Cu	Ni		Co	Be	Cd	U	
					Li	Sn		As		Y	Ag	
								Se		La		
								Mo		Ce		
								Ba		Pr		
								Sr		Nd		

ICB/CCB and all diluent

1% HNO₃, 1%HCl in double deionized water

HNO₃ Lot No. K23022

HCl Lot No. K33031

Internal Standards

The internal standard intermediate contains 2 PPM each of Ga, Ge and Pt; 1 PPM each of In and Rh and 0.5 PPM of Bi. This intermediate is added to all standards and samples in the same proportion of 1 on top of 100. Most often this is done by adding 0.05ml of internal standard intermediate on top of 5ml of sample or standard. The final concentration of internal standard added to the standards or samples is about 20ppb each of Ga, Ge and Pt; 10ppb each of In and Rh; and 5ppb of Bi.

Pipet ID Numbers

1.0 to 5.0 ml -- M-66
0.1 to 1.0ml -- M-60
0.01 to 0.1ml -- M-56
0.5ml -- M-14

Dilutions

2X dilutions made by diluting 5ml of sample to 10ml final volume
5X dilutions made by diluting 1ml of sample to 5ml final volume
10X dilutions made by diluting 1ml of sample to 10ml final volume
50X dilutions made by diluting 0.1ml of sample to 5ml final volume
100X dilutions made by diluting 0.1ml of sample to 10ml final volume
200X dilutions made by diluting 0.05ml of sample to 10ml final volume
500X dilutions made by diluting 0.02ml of sample to 10ml final volume

Analytical Spikes

None needed in this sequence.

Daily Maintenance Items

1. Check / change pump tubing
2. Check / clean drain containers
3. Tune instrument per manufacturer's procedures
4. Perform resolution / mass calibration / stability test and print QC tune report

Monthly Maintenance Items

1. Check / clean torch and cones
2. Check / clean nebulizer and spray chamber
3. Check / fill water recirculating reservoir
4. Check / fill vacuum pump oil

Additional Comments

No additional comments.

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 Mar 2013 11:49:06 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\2008TUNE.m

Minimum Response (CPS)

Element	Actual	Required	Flag
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RSD (%)

Element	Actual	Required	Flag
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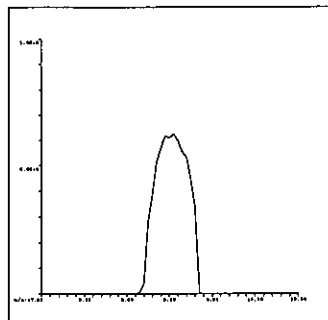
9 Be	1.75	5.00	
24 Mg	0.61	5.00	
25 Mg	0.86	5.00	
26 Mg	0.63	5.00	
59 Co	0.81	5.00	
115 In	0.54	5.00	
206 Pb	0.77	5.00	
207 Pb	0.64	5.00	
208 Pb	0.62	5.00	

Ion Ratio

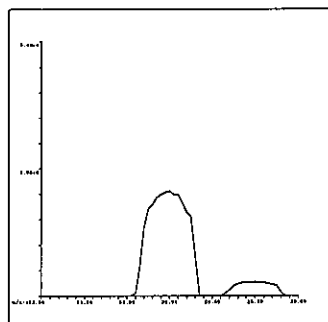
Element	Actual	Required	Flag
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Maximum Bkg. Count (CPS)

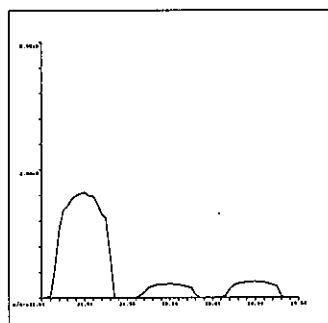
Element	Actual	Required	Flag
---------	--------	----------	------



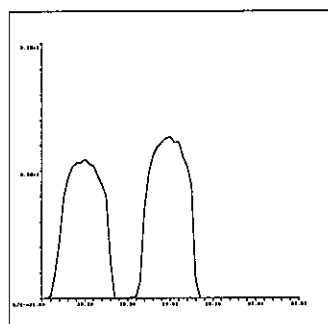
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.80
Flag:



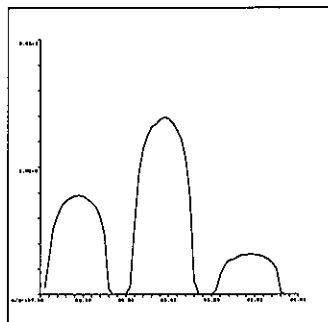
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.80
Flag:



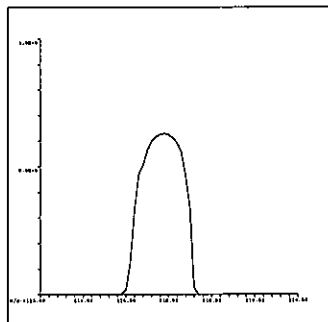
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.80
Flag:



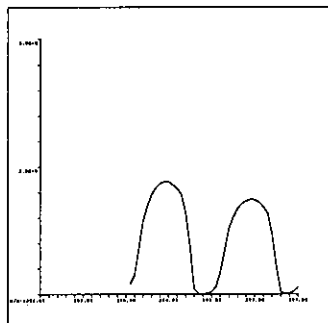
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.80
Flag:



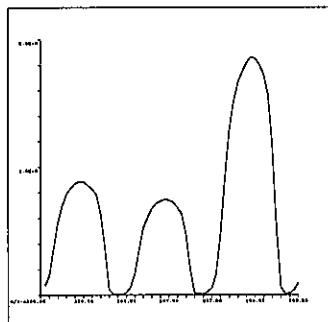
59 Co
Mass Calib.
Actual: 58.95
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.70
Required: 0.80
Flag:



115 In
Mass Calib.
Actual: 114.95
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.80
Flag:

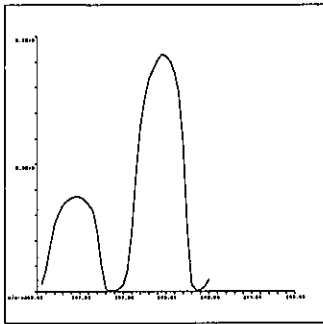


206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.80
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.80
Flag:

C:\ICPMH\1\7500\QCTUNE.D



208 Pb

Mass Calib.

Actual: 207.95

Required: 207.90-208.10

Flag:

Peak Width

Actual: 0.65

Required: 0.80

Flag:

QC Tune Result:Pass

Batch Summary Report

Batch Folder: C:\ICPMH\1\DATA\13C08m01.B\

Analysis File: 13C08m01.batch.xml

Tune Step: #1 nogas.u

#2 hehe.u

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
1		3/8/2013 12:28:59 PM	001SMPL.D	blank	Sample		1.0000
2		3/8/2013 12:32:02 PM	002CALB.D	blank	CalBlk	1	1.0000
3		3/8/2013 12:35:05 PM	003CALB.D	blank	CalBlk	1	1.0000
4		3/8/2013 12:38:08 PM	004CALS.D	H/1000	CalStd	2	1.0000
5		3/8/2013 12:41:15 PM	005CALS.D	H/100	CalStd	3	1.0000
6		3/8/2013 12:44:19 PM	006CALS.D	H/10	CalStd	4	1.0000
7		3/8/2013 12:47:21 PM	007CALS.D	HIGH	CalStd	5	1.0000
8		3/8/2013 12:54:55 PM	008SMPL.D	ZZZZZZ	Sample		1.0000
9		3/8/2013 1:02:30 PM	009SMPL.D	ICV	6-ICV		1.0000
10		3/8/2013 1:18:37 PM	001SMPL_13C08n00.D	ICB	6-CCB		1.0000
11		3/8/2013 1:21:43 PM	002SMPL_13C08n00.D	CR11	Sample		1.0000
12		3/8/2013 1:24:46 PM	003SMPL_13C08n00.D	ICSA	Sample		1.0000
13		3/8/2013 1:27:49 PM	004SMPL_13C08n00.D	ICSAB	Sample		1.0000
14		3/8/2013 1:39:37 PM	001SMPL_13C08n01.D	ZZZZZZ	Sample		1.0000
15		3/8/2013 1:42:39 PM	002SMPL_13C08n01.D	IP130307-1MB 10X	6-CCB		1.0000
16		3/8/2013 1:45:41 PM	003SMPL_13C08n01.D	1302343-1 10X	Sample		1.0000
17		3/8/2013 1:48:43 PM	004SMPL_13C08n01.D	1302347-1 10X	Sample		1.0000
18		3/8/2013 1:51:46 PM	005SMPL_13C08n01.D	1303056-2 10X	Sample		1.0000
19		3/8/2013 1:54:48 PM	006SMPL_13C08n01.D	1303056-2D 10X	Sample		1.0000
20		3/8/2013 2:00:19 PM	007SMPL_13C08n01.D	1303056-2L 50X	Sample		1.0000
21		3/8/2013 2:03:22 PM	008SMPL_13C08n01.D	CCV	6-CCV		1.0000
22		3/8/2013 2:16:46 PM	001SMPL_13C08o01.D	CCB	6-CCB		1.0000
23		3/8/2013 2:19:50 PM	002SMPL_13C08o01.D	F130301-1MB 10X	6-CCB		1.0000
24		3/8/2013 2:22:54 PM	003SMPL_13C08o01.D	1303056-2MS 10X	Sample		1.0000
25		3/8/2013 2:25:56 PM	004SMPL_13C08o01.D	1303056-2MSD 10X	Sample		1.0000
26		3/8/2013 2:29:01 PM	005SMPL_13C08o01.D	FM130301-1LCS 10X	6-LCS		1.0000
27		3/8/2013 2:32:06 PM	006SMPL_13C08o01.D	IP130307-1LCS 10X	6-LCS		1.0000

Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
28		3/8/2013 2:41:26 PM	001SMPL_13C08o02.D	1303045-1 10X	Sample		1.0000
29		3/8/2013 2:44:27 PM	002SMPL_13C08o02.D	1303044-1 10X	Sample		1.0000
30		3/8/2013 2:47:30 PM	003SMPL_13C08o02.D	CCV	6-CCV		1.0000
31		3/8/2013 2:58:50 PM	001SMPL_13C08o03.D	CCB	6-CCB		1.0000
32		3/8/2013 3:01:54 PM	002SMPL_13C08o03.D	1303028-3 10X	Sample		1.0000
33		3/8/2013 3:04:56 PM	003SMPL_13C08o03.D	1303028-3L 50X	Sample		1.0000
34		3/8/2013 3:07:58 PM	004SMPL_13C08o03.D	1303028-3MS 10X	Sample		1.0000
35		3/8/2013 3:11:01 PM	005SMPL_13C08o03.D	1303028-1 10X	Sample		1.0000
36		3/8/2013 3:14:04 PM	006SMPL_13C08o03.D	1303028-2 10X	Sample		1.0000
37		3/8/2013 3:17:07 PM	007SMPL_13C08o03.D	1303046-1 10X	Sample		1.0000
38		3/8/2013 3:20:10 PM	008SMPL_13C08o03.D	1303029-1 10X	Sample		1.0000
39		3/8/2013 3:23:14 PM	009SMPL_13C08o03.D	1303029-2 10X	Sample		1.0000
40		3/8/2013 3:26:19 PM	010SMPL_13C08o03.D	1303030-1 10X	Sample		1.0000
41		3/8/2013 3:38:10 PM	001SMPL_13C08p00.D	1303028-3MSD 10X	Sample		1.0000
42		3/8/2013 3:41:12 PM	002SMPL_13C08p00.D	CCV	6-CCV		1.0000
43		3/8/2013 3:53:58 PM	001SMPL_13C08p01.D	CCB	6-CCB		1.0000
44		3/8/2013 4:10:22 PM	001SMPL_13C08q00.D	IP130307-2MB 10X	6-CCB		1.0000
45		3/8/2013 4:12:19 PM	002SMPL_13C08q00.D	IP130307-3MB 10X	6-CCB		1.0000
46		3/8/2013 4:14:18 PM	003SMPL_13C08q00.D	IP130307-4MB 10X	6-CCB		1.0000
47		3/8/2013 4:16:17 PM	004SMPL_13C08q00.D	IM130307-2LCS 10X	6-LCS		1.0000
48		3/8/2013 4:18:18 PM	005SMPL_13C08q00.D	IM130307-3LCS 10X	6-LCS		1.0000
49		3/8/2013 4:20:17 PM	006SMPL_13C08q00.D	IM130307-4LCS 10X	6-LCS		1.0000
50		3/8/2013 4:22:17 PM	007SMPL_13C08q00.D	1303058-1 100X	Sample		1.0000
51		3/8/2013 4:24:16 PM	008SMPL_13C08q00.D	1303058-1D 100X	Sample		1.0000
52		3/8/2013 4:26:16 PM	009SMPL_13C08q00.D	1303058-1L 500X	Sample		1.0000
53		3/8/2013 4:28:16 PM	010SMPL_13C08q00.D	1303058-1MS 100X	Sample		1.0000
54		3/8/2013 4:34:38 PM	011SMPL_13C08q00.D	CCV	6-CCV		1.0000
55		3/8/2013 4:36:36 PM	012SMPL_13C08q00.D	CCB	6-CCB		1.0000
56		3/8/2013 4:38:36 PM	013SMPL_13C08q00.D	1303058-1MSD 100X	Sample		1.0000
57		3/8/2013 4:40:36 PM	014SMPL_13C08q00.D	1303058-1A 100X	Sample		1.0000
58		3/8/2013 4:42:35 PM	015SMPL_13C08q00.D	1303058-2 100X	Sample		1.0000
59		3/8/2013 4:44:35 PM	016SMPL_13C08q00.D	1303058-3 100X	Sample		1.0000
60		3/8/2013 4:46:35 PM	017SMPL_13C08q00.D	1303058-4 100X	Sample		1.0000

Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
61		3/8/2013 4:48:33 PM	018SMPL_13C08q00.D	1303058-5 100X	Sample		1.0000
62		3/8/2013 4:50:33 PM	019SMPL_13C08q00.D	1303058-6 100X	Sample		1.0000
63		3/8/2013 4:52:32 PM	020SMPL_13C08q00.D	1303058-7 100X	Sample		1.0000
64		3/8/2013 4:54:31 PM	021SMPL_13C08q00.D	1303058-8 100X	Sample		1.0000
65		3/8/2013 4:56:30 PM	022SMPL_13C08q00.D	1303058-9 100X	Sample		1.0000
66		3/8/2013 5:02:53 PM	023SMPL_13C08q00.D	CCV	6-CCV		1.0000
67		3/8/2013 5:04:52 PM	024SMPL_13C08q00.D	CCB	6-CCB		1.0000
68		3/8/2013 5:06:53 PM	025SMPL_13C08q00.D	1303058-10 100X	Sample		1.0000
69		3/8/2013 5:08:53 PM	026SMPL_13C08q00.D	1303058-11 100X	Sample		1.0000
70		3/8/2013 5:10:52 PM	027SMPL_13C08q00.D	1303058-12 100X	Sample		1.0000
71		3/8/2013 5:12:52 PM	028SMPL_13C08q00.D	1303058-13 100X	Sample		1.0000
72		3/8/2013 5:14:51 PM	029SMPL_13C08q00.D	1303058-14 100X	Sample		1.0000
73		3/8/2013 5:16:49 PM	030SMPL_13C08q00.D	1303059-1 100X	Sample		1.0000
74		3/8/2013 5:18:48 PM	031SMPL_13C08q00.D	1303059-1D 100X	Sample		1.0000
75		3/8/2013 5:20:48 PM	032SMPL_13C08q00.D	1303059-1L 500X	Sample		1.0000
76		3/8/2013 5:22:48 PM	033SMPL_13C08q00.D	1303059-1MS 100X	Sample		1.0000
77		3/8/2013 5:24:48 PM	034SMPL_13C08q00.D	1303059-1MSD 100X	Sample		1.0000
78		3/8/2013 5:31:10 PM	035SMPL_13C08q00.D	CCV	6-CCV		1.0000
79		3/8/2013 5:33:10 PM	036SMPL_13C08q00.D	CCB	6-CCB		1.0000
80		3/8/2013 5:35:09 PM	037SMPL_13C08q00.D	1303059-1A 100X	Sample		1.0000
81		3/8/2013 5:37:09 PM	038SMPL_13C08q00.D	1303059-2 100X	Sample		1.0000
82		3/8/2013 5:39:08 PM	039SMPL_13C08q00.D	1303059-3 100X	Sample		1.0000
83		3/8/2013 5:41:07 PM	040SMPL_13C08q00.D	1303059-4 100X	Sample		1.0000
84		3/8/2013 5:43:06 PM	041SMPL_13C08q00.D	1303059-5 100X	Sample		1.0000
85		3/8/2013 5:45:06 PM	042SMPL_13C08q00.D	1303059-6 100X	Sample		1.0000
86		3/8/2013 5:47:05 PM	043SMPL_13C08q00.D	1303059-7 100X	Sample		1.0000
87		3/8/2013 5:49:03 PM	044SMPL_13C08q00.D	1303059-8 100X	Sample		1.0000
88		3/8/2013 5:51:03 PM	045SMPL_13C08q00.D	1303059-9 100X	Sample		1.0000
89		3/8/2013 5:53:02 PM	046SMPL_13C08q00.D	1303059-10 100X	Sample		1.0000
90		3/8/2013 5:59:24 PM	047SMPL_13C08q00.D	CCV	6-CCV		1.0000
91		3/8/2013 6:01:24 PM	048SMPL_13C08q00.D	CCB	6-CCB		1.0000
92		3/8/2013 6:03:24 PM	049SMPL_13C08q00.D	1303059-11 100X	Sample		1.0000
93		3/8/2013 6:05:23 PM	050SMPL_13C08q00.D	1303059-12 100X	Sample		1.0000

Batch Summary Report

	Rjct	Acq. Date-Time	Data File	Sample Name	Type	Level	Dilution
94		3/8/2013 6:07:22 PM	051SMPL_13C08q00.D	1303059-13 100X	Sample		1.0000
95		3/8/2013 6:09:21 PM	052SMPL_13C08q00.D	1303059-14 100X	Sample		1.0000
96		3/8/2013 6:11:21 PM	053SMPL_13C08q00.D	1303059-15 100X	Sample		1.0000
97		3/8/2013 6:13:20 PM	054SMPL_13C08q00.D	1303060-1 100X	Sample		1.0000
98		3/8/2013 6:15:19 PM	055SMPL_13C08q00.D	1303060-1D 100X	Sample		1.0000
99		3/8/2013 6:17:19 PM	056SMPL_13C08q00.D	1303060-1L 50X	Sample		1.0000
100		3/8/2013 6:19:18 PM	057SMPL_13C08q00.D	1303060-1MS 100X	Sample		1.0000
101		3/8/2013 6:21:19 PM	058SMPL_13C08q00.D	1303060-1MSD 100X	Sample		1.0000
102		3/8/2013 6:27:41 PM	059SMPL_13C08q00.D	CCV	6-CCV		1.0000
103		3/8/2013 6:29:41 PM	060SMPL_13C08q00.D	CCB	6-CCB		1.0000
104		3/8/2013 6:31:40 PM	061SMPL_13C08q00.D	1303060-1A 100X	Sample		1.0000
105		3/8/2013 6:33:39 PM	062SMPL_13C08q00.D	1303060-2 100X	Sample		1.0000
106		3/8/2013 6:35:38 PM	063SMPL_13C08q00.D	1303060-3 100X	Sample		1.0000
107		3/8/2013 6:37:37 PM	064SMPL_13C08q00.D	1303060-4 100X	Sample		1.0000
108		3/8/2013 6:39:35 PM	065SMPL_13C08q00.D	1303060-5 100X	Sample		1.0000
109		3/8/2013 6:41:35 PM	066SMPL_13C08q00.D	1303060-6 100X	Sample		1.0000
110		3/8/2013 6:43:36 PM	067SMPL_13C08q00.D	1303060-7 100X	Sample		1.0000
111		3/8/2013 6:45:35 PM	068SMPL_13C08q00.D	1303060-8 100X	Sample		1.0000
112		3/8/2013 6:47:34 PM	069SMPL_13C08q00.D	1303060-9 100X	Sample		1.0000
113		3/8/2013 6:49:34 PM	070SMPL_13C08q00.D	1303060-10 100X	Sample		1.0000
114		3/8/2013 6:55:57 PM	071SMPL_13C08q00.D	CCV	6-CCV		1.0000
115		3/8/2013 6:57:57 PM	072SMPL_13C08q00.D	CCB	6-CCB		1.0000
116		3/8/2013 6:59:56 PM	073SMPL_13C08q00.D	1303060-11 100X	Sample		1.0000
117		3/8/2013 7:01:55 PM	074SMPL_13C08q00.D	1303060-12 100X	Sample		1.0000
118		3/8/2013 7:08:18 PM	075SMPL_13C08q00.D	CCV	6-CCV		1.0000
119		3/8/2013 7:10:18 PM	076SMPL_13C08q00.D	CCB	6-CCB		1.0000

Batch Summary Report

Analyte Table

		9 Be [1]		11 B [1]		23 Na [2]		26 Mg [2]		27 Al [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
1	blank		53.33		844.48		10623.84		13.33		80.00
2	blank	0.004	78.67	-0.301	852.26	-1.579	10570.36	0.297	13.33	-0.056	93.34
3	blank	0.000	52.00	-0.307	834.48	0.000	10877.35	0.000	0.00	0.000	100.01
4	H/1000	0.048	406.68	0.855	5263.09	97.046	38876.33	9.846	453.37	4.337	730.05
5	H/100	0.474	3727.11	10.504	44064.68	984.380	309591.82	94.543	4620.86	48.346	7532.00
6	H/10	4.740	37808.03	99.947	420271.19	9892.168	3038029.95	941.095	46525.34	476.342	74100.78
7	HIGH	50.026	398033.93	999.976	4744988.42	100010.942	30007005.39	10005.945	484965.82	5002.383	761893.22
8	ZZZZZZ	0.004	80.00	23.125	87664.13	-0.111	10914.03	0.373	16.67	0.017	103.34
9	ICV	9.895	82998.60	216.456	965834.65	20006.120	6307545.12	1940.500	98676.43	972.633	155518.95
10	ICB	0.001	62.00	4.286	18603.65	0.508	11531.11	0.791	36.67	-0.147	83.33
11	CRI1	0.045	437.34	4.357	21033.11	99.188	44189.75	12.297	633.37	7.278	1293.43
12	ICSA	0.000	58.67	2.713	14924.50	24581.001	8039187.79	8989.296	474309.47	8886.710	1473435.71
13	ICSAB	4.911	41854.10	107.600	490729.44	35094.335	11323733.58	10174.096	529875.49	9505.808	1555678.41
14	ZZZZZZ	-0.001	46.67	2.494	11984.33	3.786	12982.34	2.413	116.67	9.330	1526.81
15	IP130307-1MB ...	0.001	60.67	2.022	9985.26	-1.602	10777.19	1.017	46.67	0.856	226.68
16	1302343-1 10X	-0.001	51.33	7.818	36454.50	9165.016	3033886.52	113.698	6054.68	2.128	476.70
17	1302347-1 10X	-0.001	54.00	7.942	36859.96	7757.262	2533659.39	91.629	4810.92	1.706	400.02
18	1303056-2 10X	-0.001	52.67	9.479	46189.07	5851.868	1975145.13	2422.050	131215.22	2.985	630.04
19	1303056-2D 10X	-0.001	56.67	9.893	49078.10	6070.727	2108090.18	2464.419	137394.70	2.881	630.04
20	1303056-2L 50X	-0.002	46.67	2.972	15967.60	1108.962	397497.17	465.060	26004.48	1.726	430.03
21	CCV	4.675	42947.45	97.497	472688.78	9880.744	3384676.93	960.876	52977.95	475.908	82557.20
22	CCB	-0.002	40.67	1.507	8628.94	-2.093	11677.90	0.531	26.67	0.314	163.34
23	F130301-1MB ...	-0.003	34.67	1.357	7953.08	-2.670	11170.89	0.619	30.00	0.063	120.01
24	1303056-2MS 10X	4.816	42936.69	103.981	488678.35	7095.319	2372593.51	3367.903	180975.83	459.493	77720.42
25	1303056-2MSD ...	4.816	41882.16	112.612	518711.91	7084.697	2409815.69	3375.730	184518.10	459.444	79023.51
26	FM130301-1LC...	4.669	40353.16	106.888	481867.74	1010.147	347859.20	904.683	48444.51	442.088	74492.57
27	IP130307-1LCS...	4.460	38828.92	103.551	467421.06	975.466	337270.32	875.883	47030.49	425.206	71857.09
28	1303045-1 10X	-0.001	55.33	19.472	89461.27	5665.632	1881935.39	3241.554	172795.60	0.758	246.68
29	1303044-1 10X	-0.001	49.33	19.830	91742.17	7872.068	2634363.81	3436.628	184929.56	1.273	336.69
30	CCV	4.746	41882.75	101.087	471674.37	9932.055	3337990.68	945.117	51125.56	473.978	80684.35
31	CCB	-0.001	51.33	2.723	13211.92	-3.614	10927.38	0.610	30.00	-0.112	93.34

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Batch Summary Report

Analyte Table

	Sample Name	9 Be [1]		11 B [1]		23 Na [2]		26 Mg [2]		27 Al [2]	
		Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
32	1303028-3 10X	-0.004	26.00	27.150	125046.40	10167.130	3398031.82	431.829	23233.69	1.713	410.03
33	1303028-3L 50X	-0.001	52.00	8.263	39397.74	1942.986	659894.12	84.685	4554.16	1.058	300.02
34	1303028-3MS 10X	4.762	41908.31	124.799	579910.79	11676.563	3942061.92	3156.345	171608.26	481.501	82376.13
35	1303028-1 10X	-0.001	56.67	82.213	381375.71	47428.457	15648226.02	13433.904	715596.50	1.192	320.02
36	1303028-2 10X	-0.001	54.67	32.490	149779.64	11397.007	3765692.97	582.559	30989.47	1.192	320.02
37	1303046-1 10X	-0.002	46.00	30.386	139508.66	5858.215	1935238.36	4261.573	225973.75	0.967	280.02
38	1303029-1 10X	-0.002	44.00	26.187	121376.61	10786.232	3598042.45	6875.603	369323.82	0.429	193.34
39	1303029-2 10X	-0.002	43.33	32.597	149102.92	8239.536	2670156.11	3880.385	202250.49	0.864	260.01
40	1303030-1 10X	0.031	327.34	30.568	140474.89	68597.875	22300582.17	712.262	37392.69	37.217	6258.43
41	1303028-3MSD ...	4.764	41664.30	126.666	578146.00	12150.611	3972114.31	3264.956	171912.62	500.955	82994.94
42	CCV	4.713	40095.85	106.597	482493.75	10086.793	3247907.76	956.177	49560.94	481.034	78453.75
43	CCB	-0.003	33.33	3.383	16084.38	-2.609	11294.24	0.880	43.33	-0.074	100.01
44	IP130307-2MB ...										
45	IP130307-3MB ...										
46	IP130307-4MB ...										
47	IM130307-2LCS...										
48	IM130307-3LCS...										
49	IM130307-4LCS...										
50	1303058-1 100X										
51	1303058-1D 100X										
52	1303058-1L 500X										
53	1303058-1MS 1...										
54	CCV										
55	CCB										
56	1303058-1MSD ...										
57	1303058-1A 100X										
58	1303058-2 100X										
59	1303058-3 100X										
60	1303058-4 100X										
61	1303058-5 100X										
62	1303058-6 100X										

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Batch Summary Report

Analyte Table

		9 Be [1]		11 B [1]		23 Na [2]		26 Mg [2]		27 Al [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
63	1303058-7 100X										
64	1303058-8 100X										
65	1303058-9 100X										
66	CCV										
67	CCB										
68	1303058-10 100X										
69	1303058-11 100X										
70	1303058-12 100X										
71	1303058-13 100X										
72	1303058-14 100X										
73	1303059-1 100X										
74	1303059-1D 100X										
75	1303059-1L 500X										
76	1303059-1MS 1...										
77	1303059-1MSD ...										
78	CCV										
79	CCB										
80	1303059-1A 100X										
81	1303059-2 100X										
82	1303059-3 100X										
83	1303059-4 100X										
84	1303059-5 100X										
85	1303059-6 100X										
86	1303059-7 100X										
87	1303059-8 100X										
88	1303059-9 100X										
89	1303059-10 100X										
90	CCV										
91	CCB										
92	1303059-11 100X										
93	1303059-12 100X										

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Batch Summary Report

Analyte Table

		9 Be [1]		11 B [1]		23 Na [2]		26 Mg [2]		27 Al [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
94	1303059-13 100X										
95	1303059-14 100X										
96	1303059-15 100X										
97	1303060-1 100X										
98	1303060-1D 100X										
99	1303060-1L 50X										
100	1303060-1MS 1...										
101	1303060-1MSD ...										
102	CCV										
103	CCB										
104	1303060-1A 100X										
105	1303060-2 100X										
106	1303060-3 100X										
107	1303060-4 100X										
108	1303060-5 100X										
109	1303060-6 100X										
110	1303060-7 100X										
111	1303060-8 100X										
112	1303060-9 100X										
113	1303060-10 100X										
114	CCV										
115	CCB										
116	1303060-11 100X										
117	1303060-12 100X										
118	CCV										
119	CCB										

Batch Summary Report

Analyte Table

	Sample Name	39 K [2]		44 Ca [2]		52 Cr [2]		55 Mn [2]		56 Fe [2]	
		Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
1	blank		4310.74		49.02		2760.27		55.56		2366.94
2	blank	-1.396	4584.16	2.331	32.05	0.024	2786.94	0.007	100.00	-0.020	2620.33
3	blank	0.000	4624.21	0.000	14.71	0.000	2652.48	0.000	80.00	0.000	2670.35
4	H/1000	34.902	7205.17	46.823	367.39	0.508	4920.80	0.200	636.69	5.935	27761.02
5	H/100	468.985	39628.19	467.773	3755.87	4.861	25038.05	1.965	5871.13	51.878	235048.96
6	H/10	4694.073	354995.63	4676.854	37862.22	47.968	223807.92	19.525	58243.49	495.182	2244758.51
7	HIGH	50030.918	3660925.78	50032.640	396977.17	500.205	2260848.52	200.048	584276.80	5000.462	22197683.00
8	ZZZZZZ	0.241	4667.53	4.168	45.09	-0.019	2589.13	0.000	80.00	0.008	2720.34
9	ICV	9896.444	763937.33	9730.807	81015.72	98.978	471781.04	39.482	121042.57	1002.601	4671637.85
10	ICB	3.539	5087.67	0.392	18.50	-0.026	2664.71	-0.004	72.22	-0.061	2533.63
11	CR11	39.320	8405.87	63.654	553.17	0.422	5098.63	0.248	863.37	13.382	66174.20
12	ICSA	9671.079	774835.06	28654.680	247518.32	0.257	4413.99	1.952	6300.19	23409.867	1.13120E+08
13	ICSAB	15099.406	1191049.70	34734.420	296168.25	50.563	248396.29	22.312	70108.10	24259.803	1.15715E+08
14	ZZZZZZ	-1.989	4890.94	83.085	674.00	-0.080	2526.90	0.228	751.14	2.923	15865.07
15	IP130307-1MB ...	-6.361	4334.09	2.955	37.37	-0.023	2639.14	-0.007	64.44	0.245	3787.30
16	1302343-1 10X	266.928	26976.32	1759.202	15348.00	-0.098	2694.71	2.120	6901.54	4.560	25440.54
17	1302347-1 10X	216.845	22622.99	1113.080	9583.49	-0.102	2638.03	1.836	5900.03	16.762	83757.66
18	1303056-2 10X	503.730	46777.16	13918.315	123454.48	-0.113	2662.48	2.844	9381.67	1.363	10016.79
19	1303056-2D 10X	531.039	50434.23	14686.686	134056.42	-0.112	2744.72	3.039	10308.92	1.879	12943.80
20	1303056-2L 50X	90.444	13442.66	2640.747	24201.13	-0.167	2466.89	0.563	1997.93	0.337	5091.03
21	CCV	4795.305	404302.90	4763.382	43010.07	48.670	253208.41	19.504	64886.86	502.823	2542049.18
22	CCB	-5.889	4794.25	-0.709	10.78	-0.078	2640.25	-0.008	65.55	0.088	3430.52
23	F130301-1MB ...	-1.090	5010.97	1.877	31.38	-0.124	2353.54	0.003	97.78	0.090	3350.50
24	1303056-2MS 10X	1024.710	88590.08	15589.636	137153.34	49.000	248446.53	22.593	73237.10	517.708	2550938.35
25	1303056-2MSD ...	1021.969	89892.83	15272.008	136661.25	48.744	251419.42	22.448	74030.65	512.397	2568282.36
26	FM130301-1LC...	485.124	44737.89	1013.393	8900.85	47.139	238308.28	19.038	61525.29	497.181	2441308.61
27	IP130307-1LCS...	466.835	43377.66	959.111	8447.22	45.889	232697.83	18.424	59701.08	477.657	2351927.41
28	1303045-1 10X	401.166	37784.47	8515.282	74327.06	0.077	3562.66	0.290	1028.94	7.620	40401.03
29	1303044-1 10X	2252.843	188364.89	9196.025	81023.29	-0.033	3049.22	3.437	11239.50	5.198	28849.83
30	CCV	4745.069	392605.05	4749.295	42070.45	47.904	244577.21	19.182	62618.30	501.568	2488120.33
31	CCB	-0.744	5057.66	3.484	44.34	-0.133	2324.64	-0.003	80.00	0.056	3203.81

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Batch Summary Report

Analyte Table

		39 K [2]		44 Ca [2]		52 Cr [2]		55 Mn [2]		56 Fe [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
32	1303028-3 10X	340.917	33250.89	1455.812	12839.33	-0.129	2568.02	-0.006	76.67	0.045	3457.24
33	1303028-3L 50X	65.863	10937.44	275.447	2443.01	-0.160	2411.32	0.014	141.11	0.012	3290.46
34	1303028-3MS 10X	2260.232	190919.16	3230.102	28766.78	48.295	247810.15	19.654	64484.27	511.532	2550324.81
35	1303028-1 10X	1488.473	125058.01	54990.615	479501.33	-0.146	2455.78	159.349	511549.39	0.220	4274.08
36	1303028-2 10X	306.722	30141.90	1768.135	15417.63	-0.141	2476.89	0.384	1325.64	0.181	4080.69
37	1303046-1 10X	225.007	23500.76	10550.823	91595.99	-0.117	2588.03	0.029	188.89	0.104	3690.59
38	1303029-1 10X	651.894	58383.52	18064.125	158839.63	-0.133	2538.01	0.008	121.11	0.070	3573.91
39	1303029-2 10X	494.144	44243.51	7262.231	61979.40	-0.100	2628.03	0.013	133.34	0.107	3637.26
40	1303030-1 10X	1938.815	158909.82	1875.182	16135.50	0.618	6154.57	13.711	43466.20	123.040	594783.70
41	1303028-3MSD ...	2287.718	187078.58	3360.390	28981.09	49.234	244595.80	20.000	63545.11	515.335	2488088.71
42	CCV	4795.381	380092.91	4738.074	40218.19	48.694	238159.63	19.593	61280.02	503.703	2393956.01
43	CCB	-5.047	4760.93	4.315	51.31	-0.093	2522.45	0.003	96.67	0.062	3247.15
44	IP130307-2MB ...										
45	IP130307-3MB ...										
46	IP130307-4MB ...										
47	IM130307-2LCS...										
48	IM130307-3LCS...										
49	IM130307-4LCS...										
50	1303058-1 100X										
51	1303058-1D 100X										
52	1303058-1L 500X										
53	1303058-1MS 1...										
54	CCV										
55	CCB										
56	1303058-1MSD ...										
57	1303058-1A 100X										
58	1303058-2 100X										
59	1303058-3 100X										
60	1303058-4 100X										
61	1303058-5 100X										
62	1303058-6 100X										

Batch Summary Report

Analyte Table

		39 K [2]		44 Ca [2]		52 Cr [2]		55 Mn [2]		56 Fe [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
63	1303058-7 100X										
64	1303058-8 100X										
65	1303058-9 100X										
66	CCV										
67	CCB										
68	1303058-10 100X										
69	1303058-11 100X										
70	1303058-12 100X										
71	1303058-13 100X										
72	1303058-14 100X										
73	1303059-1 100X										
74	1303059-1D 100X										
75	1303059-1L 500X										
76	1303059-1MS 1...										
77	1303059-1MSD ...										
78	CCV										
79	CCB										
80	1303059-1A 100X										
81	1303059-2 100X										
82	1303059-3 100X										
83	1303059-4 100X										
84	1303059-5 100X										
85	1303059-6 100X										
86	1303059-7 100X										
87	1303059-8 100X										
88	1303059-9 100X										
89	1303059-10 100X										
90	CCV										
91	CCB										
92	1303059-11 100X										
93	1303059-12 100X										

Batch Summary Report

Analyte Table

		39 K [2]		44 Ca [2]		52 Cr [2]		55 Mn [2]		56 Fe [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
94	1303059-13 100X										
95	1303059-14 100X										
96	1303059-15 100X										
97	1303060-1 100X										
98	1303060-1D 100X										
99	1303060-1L 50X										
100	1303060-1MS 1...										
101	1303060-1MSD ...										
102	CCV										
103	CCB										
104	1303060-1A 100X										
105	1303060-2 100X										
106	1303060-3 100X										
107	1303060-4 100X										
108	1303060-5 100X										
109	1303060-6 100X										
110	1303060-7 100X										
111	1303060-8 100X										
112	1303060-9 100X										
113	1303060-10 100X										
114	CCV										
115	CCB										
116	1303060-11 100X										
117	1303060-12 100X										
118	CCV										
119	CCB										

Batch Summary Report

Analyte Table

	Sample Name	60 Ni [2]		63 Cu [2]		66 Zn [2]		75 As [2]		78 Se [2]	
		Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
1	blank		501.13		1067.83		456.70		2.00		5.87
2	blank	-0.012	516.68	-0.001	1027.82	0.012	586.71	0.000	1.00	-0.062	6.13
3	blank	0.000	534.46	0.000	1020.05	0.000	566.70	0.000	1.00	0.000	9.07
4	H/1000	0.440	1482.31	1.090	7036.07	1.757	2483.63	0.106	44.33	0.116	15.20
5	H/100	4.934	11640.92	10.801	64084.61	21.134	24866.77	0.939	410.01	0.923	59.20
6	H/10	49.950	113789.95	102.977	608486.97	203.119	236396.91	9.691	4272.91	9.506	523.08
7	HIGH	500.006	1111548.43	999.694	5781987.27	1999.677	2276149.44	100.031	43231.95	100.050	5303.14
8	ZZZZZZ	-0.047	441.13	0.034	1206.73	-0.039	530.03	0.003	2.33	-0.075	5.47
9	ICV	100.832	235662.29	208.967	1268898.81	409.205	489177.19	19.616	8894.78	20.544	1150.57
10	ICB	-0.083	382.23	0.016	1158.95	-0.019	573.37	-0.001	0.67	-0.077	5.60
11	CRI1	0.434	1643.44	1.198	8539.00	14.851	18604.71	0.114	53.33	-0.009	10.00
12	ICSA	0.078	823.37	0.272	2926.97	21.987	27911.72	0.010	6.00	-0.067	6.93
13	ICSAB	50.987	122362.83	104.215	648795.37	236.586	289995.90	10.234	4754.04	10.505	607.88
14	ZZZZZZ	0.019	624.47	0.040	1341.19	0.105	736.72	0.000	1.00	-0.073	6.00
15	IP130307-1MB ...	0.044	644.47	-0.002	1042.27	-0.107	470.03	0.007	4.00	-0.043	7.20
16	1302343-1 10X	2.949	7839.75	0.111	1931.25	37.707	47821.29	0.004	3.33	-0.088	5.73
17	1302347-1 10X	0.032	707.80	0.059	1573.43	3.800	5354.51	0.003	2.33	-0.068	6.80
18	1303056-2 10X	0.039	747.81	0.046	1538.99	-0.028	656.71	0.133	65.33	0.585	45.60
19	1303056-2D 10X	0.107	944.48	0.145	2245.74	0.964	1973.55	0.139	70.33	0.611	48.53
20	1303056-2L 50X	-0.005	661.14	0.034	1512.32	-0.188	466.70	0.023	12.67	0.014	12.27
21	CCV	50.253	127675.84	103.923	684856.69	204.269	265100.84	9.837	4837.07	10.063	616.81
22	CCB	-0.053	484.46	0.016	1255.62	-0.017	623.38	-0.001	0.67	-0.063	6.80
23	F130301-1MB ...	-0.059	456.68	0.010	1182.28	-0.005	620.05	-0.001	0.67	-0.079	5.73
24	1303056-2MS 10X	50.160	124208.66	100.324	644426.96	206.263	260891.31	10.042	4812.73	10.380	619.88
25	1303056-2MSD ...	49.549	124823.16	100.034	653629.33	203.658	262064.29	10.022	4886.42	10.909	661.88
26	FM130301-1LC...	48.579	119906.05	98.285	629165.88	203.298	256285.68	9.452	4514.31	10.143	603.88
27	IP130307-1LCS...	47.318	117120.80	95.716	614403.36	194.717	246139.86	9.038	4328.92	9.825	586.81
28	1303045-1 10X	-0.011	613.36	0.122	2001.26	11.937	15621.42	0.208	100.00	-0.026	9.33
29	1303044-1 10X	0.090	870.04	0.229	2708.05	0.916	1840.20	0.106	52.00	0.054	14.13
30	CCV	49.244	122771.24	102.075	660022.87	202.326	257655.21	9.778	4717.70	9.991	600.94
31	CCB	-0.055	467.79	0.043	1378.97	-0.073	543.37	0.001	1.33	-0.068	6.40

Batch Summary Report

Analyte Table

		60 Ni [2]		63 Cu [2]		66 Zn [2]		75 As [2]		78 Se [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
32	1303028-3 10X	-0.026	582.24	0.038	1481.20	-0.171	470.03	0.784	377.34	0.042	13.47
33	1303028-3L 50X	-0.032	568.91	0.058	1606.77	0.008	696.72	0.149	72.67	-0.064	7.20
34	1303028-3MS 10X	50.074	125466.64	102.845	668395.87	204.887	262227.37	10.368	5027.80	10.047	607.34
35	1303028-1 10X	0.311	1401.20	0.264	2896.96	-0.101	553.37	0.157	76.00	-0.017	9.87
36	1303028-2 10X	-0.047	525.57	0.108	1906.81	-0.095	560.04	0.637	303.33	-0.063	7.20
37	1303046-1 10X	-0.034	556.68	0.098	1835.69	8.259	10960.86	0.055	27.33	0.312	28.93
38	1303029-1 10X	-0.030	572.24	0.080	1747.89	-0.044	630.04	0.034	17.33	0.021	12.13
39	1303029-2 10X	0.351	1464.53	0.086	1732.34	-0.266	340.02	0.258	121.00	-0.025	9.20
40	1303030-1 10X	0.256	1248.95	2.205	15016.07	0.687	1516.81	2.497	1170.05	0.186	21.33
41	1303028-3MSD ...	50.396	122284.41	104.519	657813.76	207.976	257778.94	10.619	4986.78	10.441	610.81
42	CCV	49.532	118316.05	103.208	639417.87	205.544	250775.09	9.651	4461.63	10.042	578.68
43	CCB	-0.064	448.90	0.049	1422.30	-0.032	593.38	0.000	1.33	-0.061	6.80
44	IP130307-2MB ...										
45	IP130307-3MB ...										
46	IP130307-4MB ...										
47	IM130307-2LCS...										
48	IM130307-3LCS...										
49	IM130307-4LCS...										
50	1303058-1 100X										
51	1303058-1D 100X										
52	1303058-1L 500X										
53	1303058-1MS 1...										
54	CCV										
55	CCB										
56	1303058-1MSD ...										
57	1303058-1A 100X										
58	1303058-2 100X										
59	1303058-3 100X										
60	1303058-4 100X										
61	1303058-5 100X										
62	1303058-6 100X										

Batch Summary Report

Analyte Table

		60 Ni [2]		63 Cu [2]		66 Zn [2]		75 As [2]		78 Se [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
63	1303058-7 100X										
64	1303058-8 100X										
65	1303058-9 100X										
66	CCV										
67	CCB										
68	1303058-10 100X										
69	1303058-11 100X										
70	1303058-12 100X										
71	1303058-13 100X										
72	1303058-14 100X										
73	1303059-1 100X										
74	1303059-1D 100X										
75	1303059-1L 500X										
76	1303059-1MS 1...										
77	1303059-1MSD ...										
78	CCV										
79	CCB										
80	1303059-1A 100X										
81	1303059-2 100X										
82	1303059-3 100X										
83	1303059-4 100X										
84	1303059-5 100X										
85	1303059-6 100X										
86	1303059-7 100X										
87	1303059-8 100X										
88	1303059-9 100X										
89	1303059-10 100X										
90	CCV										
91	CCB										
92	1303059-11 100X										
93	1303059-12 100X										

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Batch Summary Report

Analyte Table

		60 Ni [2]		63 Cu [2]		66 Zn [2]		75 As [2]		78 Se [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
94	1303059-13 100X										
95	1303059-14 100X										
96	1303059-15 100X										
97	1303060-1 100X										
98	1303060-1D 100X										
99	1303060-1L 50X										
100	1303060-1MS 1...										
101	1303060-1MSD ...										
102	CCV										
103	CCB										
104	1303060-1A 100X										
105	1303060-2 100X										
106	1303060-3 100X										
107	1303060-4 100X										
108	1303060-5 100X										
109	1303060-6 100X										
110	1303060-7 100X										
111	1303060-8 100X										
112	1303060-9 100X										
113	1303060-10 100X										
114	CCV										
115	CCB										
116	1303060-11 100X										
117	1303060-12 100X										
118	CCV										
119	CCB										

Batch Summary Report

Analyte Table

	Sample Name	88 Sr [2]		89 Y [2]		109 Ag [2]		111 Cd [2]		121 Sb [2]	
		Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
1	blank		43.33		3.33		14.44		2.67		4.44
2	blank	-0.011	56.67	0.000	0.00	-0.001	6.67	0.000	0.66	0.000	4.44
3	blank	0.000	86.67	0.000	0.00	0.000	13.33	0.000	0.66	0.000	5.55
4	H/1000	0.113	413.36	0.029	193.35	0.011	116.67	0.030	50.51	0.027	148.89
5	H/100	1.015	3173.81	0.327	2296.94	0.107	1037.83	0.324	563.03	0.322	1762.35
6	H/10	9.242	28459.73	2.861	20574.14	1.047	10264.58	3.131	5559.11	2.979	16637.94
7	HIGH	100.076	301293.61	30.014	219735.99	9.995	99602.64	29.987	54224.01	30.002	170598.24
8	ZZZZZZ	-0.006	70.00	0.001	3.33	0.000	10.00	0.001	1.98	0.000	7.78
9	ICV	19.576	61907.69	5.773	42972.00	2.093	21218.90	6.295	11573.88	6.166	35655.01
10	ICB	-0.008	66.67	0.001	6.67	0.000	10.00	0.000	-0.01	0.000	6.67
11	CRI1	0.110	453.36	0.024	176.67	0.012	135.56	0.034	61.80	0.037	214.45
12	ICSA	0.187	716.72	0.010	80.00	0.011	130.01	-0.031	-59.86	0.069	432.23
13	ICSAB	10.177	33015.14	2.998	23324.57	1.051	11146.29	3.137	6025.42	3.197	19320.95
14	ZZZZZZ	0.107	416.69	0.003	23.33	0.000	14.45	0.003	6.64	0.003	21.11
15	IP130307-1MB ...	0.010	116.67	0.000	0.00	0.001	20.00	0.001	2.64	0.001	8.89
16	1302343-1 10X	37.404	123814.91	0.002	13.33	0.000	13.33	0.002	5.18	0.021	130.00
17	1302347-1 10X	27.375	89382.95	0.000	3.33	0.000	15.56	0.000	1.64	0.019	116.67
18	1303056-2 10X	146.679	493568.70	0.002	20.00	-0.001	10.00	0.003	5.97	0.031	198.89
19	1303056-2D 10X	151.422	524329.94	0.005	43.33	0.000	17.78	0.001	3.23	0.027	180.00
20	1303056-2L 50X	27.746	96472.55	0.001	10.00	0.000	15.55	0.000	1.19	0.006	47.78
21	CCV	9.387	32243.70	2.869	23100.87	1.032	11331.99	3.116	6196.77	3.012	18847.08
22	CCB	0.005	113.34	0.000	0.00	-0.001	6.67	0.000	1.32	-0.001	2.22
23	F130301-1MB ...	-0.003	86.67	0.000	0.00	0.000	13.33	0.000	1.32	0.002	17.78
24	1303056-2MS 10X	160.296	534951.76	2.920	23003.98	1.055	11324.17	3.118	6067.61	3.095	18951.65
25	1303056-2MSD ...	159.828	542610.60	2.925	23104.12	1.073	11549.91	3.185	6213.30	3.092	18971.66
26	FM130301-1LC...	9.357	31218.15	2.888	22139.45	1.059	11060.68	3.112	5892.53	3.003	17887.09
27	IP130307-1LCS...	9.109	30476.87	2.771	21184.95	1.017	10602.56	3.029	5720.82	2.951	17531.09
28	1303045-1 10X	106.730	353380.38	0.000	0.00	0.001	22.22	0.002	5.55	0.010	68.89
29	1303044-1 10X	110.070	367907.27	0.000	3.33	0.000	15.56	0.000	1.36	0.008	53.33
30	CCV	9.440	31816.04	2.873	22753.62	0.994	10726.01	3.125	6113.25	2.985	18362.01
31	CCB	0.002	103.34	0.000	0.00	0.000	14.45	0.000	0.66	0.001	11.11

Batch Summary Report

Analyte Table

		88 Sr [2]		89 Y [2]		109 Ag [2]		111 Cd [2]		121 Sb [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
32	1303028-3 10X	26.635	89094.08	0.001	6.67	0.001	32.22	0.000	0.53	0.011	73.33
33	1303028-3L 50X	5.123	17216.78	0.000	0.00	0.000	16.67	0.000	1.06	0.002	20.00
34	1303028-3MS 10X	34.996	118264.02	2.918	23020.85	1.029	11062.90	3.109	6058.74	3.082	18896.02
35	1303028-1 10X	4352.070	14396830.62	0.023	180.01	0.000	17.78	0.016	31.59	0.013	84.45
36	1303028-2 10X	37.625	124432.52	0.001	6.67	0.000	15.55	0.003	7.23	0.009	58.89
37	1303046-1 10X	54.645	180008.76	0.010	80.00	-0.001	8.89	0.003	7.15	0.010	68.89
38	1303029-1 10X	199.306	664870.77	0.009	66.67	0.000	15.55	0.000	0.62	0.010	67.78
39	1303029-2 10X	117.311	379778.23	0.002	13.33	0.000	14.44	0.008	16.27	0.011	74.44
40	1303030-1 10X	311.365	1015199.85	0.047	360.02	0.017	194.49	-0.093	-173.56	0.443	2620.26
41	1303028-3MSD ...	36.447	119274.44	2.990	22924.01	1.050	10970.60	3.156	5971.08	3.076	18314.19
42	CCV	9.733	31425.27	2.835	21565.52	1.028	10662.64	3.170	5961.11	3.032	17927.02
43	CCB	-0.002	90.00	0.001	10.00	-0.001	8.89	0.001	3.32	0.001	13.33
44	IP130307-2MB ...										
45	IP130307-3MB ...										
46	IP130307-4MB ...										
47	IM130307-2LCS...										
48	IM130307-3LCS...										
49	IM130307-4LCS...										
50	1303058-1 100X										
51	1303058-1D 100X										
52	1303058-1L 500X										
53	1303058-1MS 1...										
54	CCV										
55	CCB										
56	1303058-1MSD ...										
57	1303058-1A 100X										
58	1303058-2 100X										
59	1303058-3 100X										
60	1303058-4 100X										
61	1303058-5 100X										
62	1303058-6 100X										

Batch Summary Report

Analyte Table

		88 Sr [2]		89 Y [2]		109 Ag [2]		111 Cd [2]		121 Sb [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
63	1303058-7 100X										
64	1303058-8 100X										
65	1303058-9 100X										
66	CCV										
67	CCB										
68	1303058-10 100X										
69	1303058-11 100X										
70	1303058-12 100X										
71	1303058-13 100X										
72	1303058-14 100X										
73	1303059-1 100X										
74	1303059-1D 100X										
75	1303059-1L 500X										
76	1303059-1MS 1...										
77	1303059-1MSD ...										
78	CCV										
79	CCB										
80	1303059-1A 100X										
81	1303059-2 100X										
82	1303059-3 100X										
83	1303059-4 100X										
84	1303059-5 100X										
85	1303059-6 100X										
86	1303059-7 100X										
87	1303059-8 100X										
88	1303059-9 100X										
89	1303059-10 100X										
90	CCV										
91	CCB										
92	1303059-11 100X										
93	1303059-12 100X										

Batch Summary Report

Analyte Table

		88 Sr [2]		89 Y [2]		109 Ag [2]		111 Cd [2]		121 Sb [2]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
94	1303059-13 100X										
95	1303059-14 100X										
96	1303059-15 100X										
97	1303060-1 100X										
98	1303060-1D 100X										
99	1303060-1L 50X										
100	1303060-1MS 1...										
101	1303060-1MSD ...										
102	CCV										
103	CCB										
104	1303060-1A 100X										
105	1303060-2 100X										
106	1303060-3 100X										
107	1303060-4 100X										
108	1303060-5 100X										
109	1303060-6 100X										
110	1303060-7 100X										
111	1303060-8 100X										
112	1303060-9 100X										
113	1303060-10 100X										
114	CCV										
115	CCB										
116	1303060-11 100X										
117	1303060-12 100X										
118	CCV										
119	CCB										

Batch Summary Report

Analyte Table

		137 Ba [1]		139 La [1]		140 Ce [1]		141 Pr [1]		146 Nd [1]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
1	blank		53.33		626.71		926.75		100.01		46.67
2	blank	-0.005	60.00	0.000	553.37	0.000	1130.10	0.000	100.01	-0.003	36.67
3	blank	0.000	100.01	0.000	563.37	0.000	1113.45	0.000	120.01	0.000	80.00
4	H/1000	0.127	1116.76	0.029	2763.71	0.034	3663.93	0.031	2913.75	0.033	630.05
5	H/100	1.032	8762.94	0.308	24680.77	0.314	25518.77	0.301	29075.53	0.312	5587.96
6	H/10	9.904	86263.89	2.931	238419.33	2.978	240149.86	3.023	301313.15	3.071	56174.10
7	HIGH	100.009	897821.39	30.007	2513328.35	30.002	2485014.65	29.998	3084665.68	29.993	565400.98
8	ZZZZZZ	-0.004	66.67	0.003	760.06	0.004	1420.14	0.000	116.67	0.002	116.68
9	ICV	20.463	187149.69	6.045	516067.30	6.167	521110.68	6.190	648171.84	6.132	117783.22
10	ICB	-0.001	93.34	0.004	903.40	0.002	1316.78	0.000	170.01	0.000	83.34
11	CRI1	0.176	1706.87	0.040	4044.07	0.046	5107.80	0.030	3197.17	0.038	820.06
12	ICSA	0.401	4000.72	0.135	12886.05	0.130	13019.39	0.007	893.41	0.025	606.71
13	ICSAB	10.666	100708.11	3.155	278211.91	3.188	278600.86	3.137	338993.08	3.132	62117.04
14	ZZZZZZ	0.087	833.40	0.010	1370.13	0.015	2380.31	0.002	283.35	0.002	120.00
15	IP130307-1MB ...	0.008	170.01	0.032	3063.80	0.052	5094.41	0.005	606.71	0.017	380.03
16	1302343-1 10X	11.494	105532.45	0.013	1776.86	0.020	2980.45	0.001	246.68	0.004	163.34
17	1302347-1 10X	7.421	67940.15	0.012	1656.84	0.016	2670.38	0.002	320.02	0.006	210.01
18	1303056-2 10X	11.600	112538.73	0.008	1416.80	0.013	2577.00	0.001	283.35	0.003	163.34
19	1303056-2D 10X	12.135	120103.37	0.022	2757.06	0.033	4460.90	0.004	556.70	0.007	250.01
20	1303056-2L 50X	2.231	21485.78	0.009	1470.15	0.018	2997.12	0.002	363.36	0.001	120.01
21	CCV	9.945	99879.58	2.914	273372.90	2.965	275705.15	2.980	342553.07	2.937	61959.62
22	CCB	-0.001	103.34	0.010	1466.82	0.021	2977.12	0.002	383.36	0.003	143.34
23	F130301-1MB ...	0.000	116.67	0.011	1570.16	0.016	2600.37	0.001	230.01	0.003	140.01
24	1303056-2MS 10X	21.672	210767.34	3.042	276488.00	3.204	288621.60	3.051	339792.01	3.025	61842.18
25	1303056-2MSD ...	22.007	209662.72	2.959	263501.50	3.113	274686.78	3.065	334366.62	3.006	60182.93
26	FM130301-1LC...	9.757	91077.95	2.886	251627.10	3.027	261604.68	2.996	320074.20	2.952	57887.08
27	IP130307-1LCS...	9.556	89331.96	2.784	243129.73	2.928	253478.52	2.880	308162.03	2.905	57017.14
28	1303045-1 10X	2.525	23815.93	0.009	1493.47	0.017	2800.42	0.001	286.68	0.003	156.68
29	1303044-1 10X	2.869	27245.11	0.208	19054.28	0.108	10737.78	0.017	2013.58	0.048	1043.43
30	CCV	9.949	96148.54	2.946	265915.97	2.998	268278.30	2.985	330173.11	3.030	61514.10
31	CCB	-0.002	96.67	0.011	1480.15	0.018	2653.72	0.002	306.68	0.002	130.00

Batch Summary Report

Analyte Table

		137 Ba [1]		139 La [1]		140 Ce [1]		141 Pr [1]		146 Nd [1]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
32	1303028-3 10X	2.556	24330.17	0.012	1770.18	0.013	2473.66	0.002	383.36	0.003	160.01
33	1303028-3L 50X	0.462	4467.52	0.008	1426.82	0.011	2303.62	0.001	276.68	0.002	140.01
34	1303028-3MS 10X	12.447	119570.51	2.991	268448.27	3.105	276183.99	3.112	342264.47	3.059	61731.83
35	1303028-1 10X	7.785	74899.05	0.031	3507.25	0.034	4374.16	0.004	566.70	0.013	356.69
36	1303028-2 10X	2.460	23498.68	0.022	2667.03	0.033	4247.47	0.003	523.37	0.006	226.68
37	1303046-1 10X	7.033	66624.78	0.016	2110.25	0.022	3287.20	0.003	450.03	0.008	263.35
38	1303029-1 10X	7.925	75608.35	0.016	2076.91	0.015	2663.68	0.002	406.69	0.006	216.68
39	1303029-2 10X	1.718	16319.30	0.009	1516.82	0.014	2593.68	0.002	320.02	0.002	133.34
40	1303030-1 10X	21.542	204038.99	1.860	164922.09	3.974	348169.49	0.301	32837.00	0.871	17416.89
41	1303028-3MSD ...	12.829	121041.41	3.035	267540.26	3.104	271151.35	3.101	334897.17	3.080	61059.19
42	CCV	9.941	93166.91	2.936	257051.67	2.985	259036.09	2.973	318849.44	2.947	58003.77
43	CCB	0.000	113.34	0.006	1143.43	0.009	1966.90	0.001	216.68	0.001	100.00
44	IP130307-2MB ...										
45	IP130307-3MB ...										
46	IP130307-4MB ...										
47	IM130307-2LCS...										
48	IM130307-3LCS...										
49	IM130307-4LCS...										
50	1303058-1 100X										
51	1303058-1D 100X										
52	1303058-1L 500X										
53	1303058-1MS 1...										
54	CCV										
55	CCB										
56	1303058-1MSD ...										
57	1303058-1A 100X										
58	1303058-2 100X										
59	1303058-3 100X										
60	1303058-4 100X										
61	1303058-5 100X										
62	1303058-6 100X										

Batch Summary Report

Analyte Table

		137 Ba [1]		139 La [1]		140 Ce [1]		141 Pr [1]		146 Nd [1]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
63	1303058-7 100X										
64	1303058-8 100X										
65	1303058-9 100X										
66	CCV										
67	CCB										
68	1303058-10 100X										
69	1303058-11 100X										
70	1303058-12 100X										
71	1303058-13 100X										
72	1303058-14 100X										
73	1303059-1 100X										
74	1303059-1D 100X										
75	1303059-1L 500X										
76	1303059-1MS 1...										
77	1303059-1MSD ...										
78	CCV										
79	CCB										
80	1303059-1A 100X										
81	1303059-2 100X										
82	1303059-3 100X										
83	1303059-4 100X										
84	1303059-5 100X										
85	1303059-6 100X										
86	1303059-7 100X										
87	1303059-8 100X										
88	1303059-9 100X										
89	1303059-10 100X										
90	CCV										
91	CCB										
92	1303059-11 100X										
93	1303059-12 100X										

Batch Summary Report

Analyte Table

		137 Ba [1]		139 La [1]		140 Ce [1]		141 Pr [1]		146 Nd [1]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
94	1303059-13 100X										
95	1303059-14 100X										
96	1303059-15 100X										
97	1303060-1 100X										
98	1303060-1D 100X										
99	1303060-1L 50X										
100	1303060-1MS 1...										
101	1303060-1MSD ...										
102	CCV										
103	CCB										
104	1303060-1A 100X										
105	1303060-2 100X										
106	1303060-3 100X										
107	1303060-4 100X										
108	1303060-5 100X										
109	1303060-6 100X										
110	1303060-7 100X										
111	1303060-8 100X										
112	1303060-9 100X										
113	1303060-10 100X										
114	CCV										
115	CCB										
116	1303060-11 100X										
117	1303060-12 100X										
118	CCV										
119	CCB										

Batch Summary Report

Analyte Table

		206 (Pb) [1]		207 (Pb) [1]		208 Pb [1]		232 Th [1]		238 U [1]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
1	blank		1093.44		966.75		4330.49		194.45		85.56
2	blank	0.002	986.75	0.006	943.42	0.002	4200.45	0.011	195.56	0.000	72.22
3	blank	0.000	936.74	0.000	816.73	0.000	4037.11	0.010	184.45	0.000	68.89
4	H/1000	0.060	2443.66	0.055	1963.56	0.056	9518.35	0.016	747.81	0.010	1224.51
5	H/100	0.540	14944.92	0.547	12739.40	0.530	58066.66	0.082	7895.65	0.097	11952.75
6	H/10	4.958	130851.51	5.033	111689.19	5.013	520128.82	1.002	110214.99	0.973	120863.72
7	HIGH	50.004	1298930.66	49.996	1091902.59	49.998	5102760.28	10.000	1198250.44	10.003	1230684.16
8	ZZZZZZ	0.013	1233.45	0.024	1280.12	0.017	5540.71	0.013	406.68	0.000	118.89
9	ICV	10.227	278048.83	10.319	235844.74	10.260	1096131.56	2.056	245833.48	1.997	256443.71
10	ICB	0.014	1293.45	0.008	990.09	0.007	4813.89	0.011	268.90	0.000	103.34
11	CRII	0.136	4737.68	0.127	3807.34	0.123	17638.26	0.026	2005.73	0.011	1422.31
12	ICSA	0.100	3970.78	0.092	3183.85	0.096	15534.10	0.034	3110.38	0.002	350.01
13	ICSAB	5.266	146146.54	5.265	122879.51	5.244	572174.92	1.101	131060.45	1.037	135452.26
14	ZZZZZZ	0.023	1566.85	0.037	1646.84	0.024	6694.29	0.011	210.00	0.001	213.34
15	IP130307-1MB ...	0.007	1170.12	0.009	1060.10	0.007	4953.96	0.011	208.89	0.001	138.89
16	1302343-1 10X	0.066	2920.43	0.077	2757.05	0.070	12325.95	0.011	287.79	0.002	303.34
17	1302347-1 10X	0.012	1433.49	0.018	1390.15	0.011	5957.44	0.011	293.34	0.002	361.12
18	1303056-2 10X	0.006	1303.46	0.012	1256.79	0.006	5470.69	0.011	273.34	0.730	97934.59
19	1303056-2D 10X	0.013	1530.15	0.018	1443.47	0.014	6547.56	0.010	220.01	0.753	104033.20
20	1303056-2L 50X	0.011	1440.14	0.006	1133.44	0.005	5374.00	0.010	148.89	0.142	19090.40
21	CCV	5.056	147858.31	5.023	123552.80	5.042	579744.60	0.989	124112.22	0.975	134229.98
22	CCB	0.000	1046.76	0.010	1146.76	0.003	4893.89	0.011	238.90	0.001	188.89
23	F130301-1MB ...	0.004	1150.10	0.006	1040.09	0.002	4743.88	0.010	202.23	0.001	142.23
24	1303056-2MS 10X	5.118	148900.24	5.087	124473.18	5.116	585173.43	1.005	124417.14	1.735	237492.38
25	1303056-2MSD ...	5.233	147455.90	5.253	124496.96	5.239	580478.92	1.069	126823.20	1.789	237243.97
26	FM130301-1LC...	5.126	143894.10	5.079	119899.58	5.116	564603.11	1.026	122478.33	0.972	128436.62
27	IP130307-1LCS...	4.843	136881.95	4.882	116045.44	4.882	542492.45	0.995	118654.00	0.940	124977.95
28	1303045-1 10X	0.011	1410.14	0.011	1216.79	0.006	5474.03	0.014	596.69	0.394	52119.05
29	1303044-1 10X	0.025	1790.19	0.035	1773.53	0.026	7627.84	0.013	491.13	0.310	40807.99
30	CCV	4.916	141949.03	4.994	121253.63	4.978	565044.72	0.972	116855.14	0.967	131409.44
31	CCB	0.006	1170.11	0.002	940.08	-0.001	4340.48	0.013	452.24	0.001	141.11

Batch Summary Report

Analyte Table

	Sample Name	206 (Pb) [1]		207 (Pb) [1]		208 Pb [1]		232 Th [1]		238 U [1]	
		Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
32	1303028-3 10X	-0.004	1020.10	-0.005	860.08	-0.006	4187.15	0.013	503.35	0.150	20217.48
33	1303028-3L 50X	0.004	1216.78	0.002	1020.09	0.000	4827.26	0.012	367.79	0.028	3863.91
34	1303028-3MS 10X	5.108	145883.35	5.081	122040.12	5.119	574827.04	0.996	120220.10	1.151	154693.82
35	1303028-1 10X	0.086	3447.28	0.102	3313.87	0.092	14616.97	0.030	2598.06	2.004	261496.54
36	1303028-2 10X	0.005	1253.45	0.005	1090.10	0.001	4910.57	0.016	890.04	0.150	20159.59
37	1303046-1 10X	-0.003	1023.42	0.002	1013.42	-0.004	4327.14	0.013	581.13	4.488	591123.40
38	1303029-1 10X	-0.005	973.41	-0.001	933.40	-0.006	4087.12	0.013	505.57	1.975	260404.17
39	1303029-2 10X	-0.001	1066.76	0.003	1026.76	-0.003	4330.47	0.012	347.79	0.808	105089.74
40	1303030-1 10X	3.546	98545.32	4.002	93414.33	3.786	413398.93	0.067	6996.42	15.704	2045786.45
41	1303028-3MSD ...	5.129	145765.15	5.074	121267.51	5.110	570907.57	0.995	119434.13	1.160	155155.19
42	CCV	5.023	141017.33	5.027	118669.06	5.042	556466.76	1.036	121381.74	0.978	129221.13
43	CCB	0.001	1060.09	0.006	1023.42	-0.001	4343.79	0.013	538.91	0.001	160.00
44	IP130307-2MB ...									0.001	151.11
45	IP130307-3MB ...									0.001	134.45
46	IP130307-4MB ...									0.002	267.78
47	IM130307-2LCS...									0.972	122390.45
48	IM130307-3LCS...									0.972	121588.87
49	IM130307-4LCS...									0.985	122209.99
50	1303058-1 100X									2.910	375545.84
51	1303058-1D 100X									3.118	412427.13
52	1303058-1L 500X									0.573	74106.80
53	1303058-1MS 1...									3.422	443879.28
54	CCV									0.988	126369.14
55	CCB									0.001	156.67
56	1303058-1MSD ...									3.780	497224.49
57	1303058-1A 100X									4.504	585130.49
58	1303058-2 100X									5.978	760484.33
59	1303058-3 100X									3.631	462649.19
60	1303058-4 100X									8.116	1042682.62
61	1303058-5 100X									9.812	1257454.03
62	1303058-6 100X									27.568	3627234.71

Batch Summary Report

Analyte Table

	Sample Name	206 (Pb) [1]		207 (Pb) [1]		208 Pb [1]		232 Th [1]		238 U [1]	
		Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
63	1303058-7 100X									10.486	1377353.32
64	1303058-8 100X									6.699	897629.70
65	1303058-9 100X									214.196	28831313.45
66	CCV									0.986	127631.77
67	CCB									0.001	280.01
68	1303058-10 100X									217.726	29599641.81
69	1303058-11 100X									3.277	447832.07
70	1303058-12 100X									0.172	23336.46
71	1303058-13 100X									0.076	10313.77
72	1303058-14 100X									0.369	49229.21
73	1303059-1 100X									12.898	1760564.66
74	1303059-1D 100X									12.768	1729018.78
75	1303059-1L 500X									2.527	343431.02
76	1303059-1MS 1...									13.411	1792830.03
77	1303059-1MSD ...									12.376	1671648.62
78	CCV									0.982	131746.83
79	CCB									0.004	588.91
80	1303059-1A 100X									15.157	2045166.70
81	1303059-2 100X									1.060	144401.60
82	1303059-3 100X									393.852	53188313.31
83	1303059-4 100X									312.818	41800490.19
84	1303059-5 100X									5.520	745766.79
85	1303059-6 100X									27.357	3667715.88
86	1303059-7 100X									8.270	1121005.26
87	1303059-8 100X									376.213	50754810.65
88	1303059-9 100X									5.365	734982.86
89	1303059-10 100X									3.561	483660.10
90	CCV									0.985	129978.90
91	CCB									0.001	188.89
92	1303059-11 100X									3.776	458204.97
93	1303059-12 100X									0.066	8156.82

Batch Summary Report

Analyte Table

		206 (Pb) [1]		207 (Pb) [1]		208 Pb [1]		232 Th [1]		238 U [1]	
	Sample Name	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS	Conc. [ppb]	CPS
94	1303059-13 100X									0.082	10288.21
95	1303059-14 100X									0.014	1763.47
96	1303059-15 100X									0.017	2110.19
97	1303060-1 100X									1.099	136007.13
98	1303060-1D 100X									1.249	153128.82
99	1303060-1L 50X									0.219	25808.45
100	1303060-1MS 1...									1.220	146960.75
101	1303060-1MSD ...									1.362	165281.35
102	CCV									0.984	121741.88
103	CCB									0.001	136.67
104	1303060-1A 100X									2.196	271379.82
105	1303060-2 100X									54.840	6756806.40
106	1303060-3 100X									5.140	630443.51
107	1303060-4 100X									13.295	1623697.47
108	1303060-5 100X									30.405	3749603.31
109	1303060-6 100X									8.619	1063664.98
110	1303060-7 100X									18.708	2291594.96
111	1303060-8 100X									25.773	3186311.43
112	1303060-9 100X									11.115	1359898.61
113	1303060-10 100X									11.308	1370151.39
114	CCV									0.980	121898.10
115	CCB									0.001	155.56
116	1303060-11 100X									11.137	1369712.14
117	1303060-12 100X									0.246	29931.80
118	CCV									0.974	121316.86
119	CCB									0.000	115.56

Batch Summary Report

ISTD Table

		71 Ga (ISTD) [1]		71 Ga (ISTD) [2]		72 Ge (ISTD) [1]		72 Ge (ISTD) [2]		103 Rh (ISTD) [1]	
	Sample Name	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
1	blank	379948.15		29671.54		183264.42		12778.98		584572.07	
2	blank	388832.16	100.0	29561.13	100.0	183211.51	100.0	13062.51	100.0	598321.80	100.0
3	blank	386426.64	100.0	29771.86	100.0	180765.00	100.0	13109.28	100.0	596131.87	100.0
4	H/1000	397503.90	102.9	30904.00	103.8	185966.64	102.9	13256.02	101.1	607144.96	101.8
5	H/100	417408.18	108.0	32941.49	110.6	192908.08	106.7	14003.38	106.8	637707.93	107.0
6	H/10	432845.46	112.0	34180.31	114.8	199963.78	110.6	14767.33	112.6	655785.64	110.0
7	HIGH	462677.17	119.7	36929.67	124.0	221661.66	122.6	16412.31	125.2	654946.63	109.9
8	ZZZZZZ	388318.72	100.5	29998.89	100.8	191147.72	105.7	12602.09	96.1	597080.09	100.2
9	ICV	462937.61	119.8	34464.22	115.8	220724.99	122.1	15411.27	117.6	690066.73	115.8
10	ICB	404282.60	104.6	31455.04	105.7	200261.85	110.8	13576.27	103.6	624229.64	104.7
11	CRI1	454168.13	117.5	33809.92	113.6	218628.74	120.9	14734.06	112.4	694328.58	116.5
12	ICSA	478811.58	123.9	36298.51	121.9	239845.89	132.7	16375.54	124.9	710258.43	119.1
13	ICSAB	475894.97	123.2	36575.72	122.9	234705.62	129.8	16772.66	127.9	700726.89	117.5
14	ZZZZZZ	412592.73	106.8	31785.46	106.8	189865.41	105.0	14320.38	109.2	634749.07	106.5
15	IP130307-1MB ...	405091.91	104.8	30312.62	101.8	188161.47	104.1	12712.16	97.0	624913.64	104.8
16	1302343-1 10X	454740.07	117.7	34677.98	116.5	209419.89	115.9	15865.19	121.0	691666.81	116.0
17	1302347-1 10X	454387.81	117.6	35526.58	119.3	211233.07	116.9	15124.35	115.4	691134.73	115.9
18	1303056-2 10X	482954.50	125.0	37060.49	124.5	225888.24	125.0	16148.74	123.2	731433.43	122.7
19	1303056-2D 10X	488650.36	126.5	38219.49	128.4	233859.93	129.4	16462.37	125.6	747400.82	125.4
20	1303056-2L 50X	479582.68	124.1	37608.23	126.3	232865.58	128.8	16108.68	122.9	728489.36	122.2
21	CCV	500352.29	129.5	38082.69	127.9	248220.06	137.3	16615.88	126.7	755213.27	126.7
22	CCB	445906.06	115.4	33565.91	112.7	218466.18	120.9	14563.85	111.1	686307.57	115.1
23	F130301-1MB ...	445206.94	115.2	32400.12	108.8	216640.94	119.8	14493.71	110.6	681192.34	114.3
24	1303056-2MS 10X	491215.00	127.1	37357.71	125.5	235067.68	130.0	16205.37	123.6	732871.40	122.9
25	1303056-2MSD ...	479623.08	124.1	37140.30	124.7	229684.14	127.1	15437.95	117.8	714955.43	119.9
26	FM130301-1LC...	464267.52	120.1	35730.84	120.0	231097.59	127.8	15397.91	117.5	710512.80	119.2
27	IP130307-1LCS...	475810.23	123.1	35620.59	119.6	235761.94	130.4	15104.30	115.2	715695.67	120.1
28	1303045-1 10X	469079.56	121.4	35703.66	119.9	223232.73	123.5	15628.29	119.2	705019.44	118.3
29	1303044-1 10X	478959.17	123.9	35189.43	118.2	225943.51	125.0	15197.83	115.9	714678.37	119.9
30	CCV	485070.40	125.5	36408.53	122.3	241413.06	133.6	15801.69	120.5	725428.14	121.7
31	CCB	427920.75	110.7	32293.11	108.5	212683.26	117.7	13896.62	106.0	649392.13	108.9

Batch Summary Report

ISTD Table

		71 Ga (ISTD) [1]		71 Ga (ISTD) [2]		72 Ge (ISTD) [1]		72 Ge (ISTD) [2]		103 Rh (ISTD) [1]	
	Sample Name	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
32	1303028-3 10X	470863.00	121.9	36285.02	121.9	227109.76	125.6	15951.94	121.7	716808.84	120.2
33	1303028-3L 50X	475325.80	123.0	35910.94	120.6	228761.34	126.6	15661.63	119.5	715295.64	120.0
34	1303028-3MS 10X	483342.13	125.1	37273.88	125.2	236395.47	130.8	15908.47	121.4	723404.31	121.3
35	1303028-1 10X	491721.67	127.2	37698.24	126.6	245188.66	135.6	15851.82	120.9	732262.31	122.8
36	1303028-2 10X	480239.07	124.3	35920.77	120.7	235286.64	130.2	15324.69	116.9	722332.62	121.2
37	1303046-1 10X	477787.90	123.6	35320.06	118.6	232907.21	128.8	15614.97	119.1	714742.83	119.9
38	1303029-1 10X	482037.88	124.7	36094.79	121.2	239538.69	132.5	15958.64	121.7	715824.29	120.1
39	1303029-2 10X	476017.51	123.2	35690.43	119.9	233142.24	129.0	15161.09	115.7	709464.31	119.0
40	1303030-1 10X	472899.12	122.4	34932.03	117.3	228598.19	126.5	15334.58	117.0	713378.27	119.7
41	1303028-3MSD ...	478326.91	123.8	36485.35	122.5	238812.83	132.1	15551.54	118.6	718913.19	120.6
42	CCV	468010.85	121.1	35546.77	119.4	240089.67	132.8	15221.14	116.1	699321.39	117.3
43	CCB	434149.92	112.3	33258.49	111.7	224421.40	124.2	14413.79	110.0	657608.58	110.3
44	IP130307-2MB ...									622126.19	104.4
45	IP130307-3MB ...									639960.55	107.4
46	IP130307-4MB ...									623166.85	104.5
47	IM130307-2LCS...									670912.85	112.5
48	IM130307-3LCS...									660695.38	110.8
49	IM130307-4LCS...									649937.52	109.0
50	1303058-1 100X									666561.81	111.8
51	1303058-1D 100X									669405.82	112.3
52	1303058-1L 500X									660853.67	110.9
53	1303058-1MS 1...									654389.58	109.8
54	CCV									657949.69	110.4
55	CCB									597725.64	100.3
56	1303058-1MSD ...									666845.85	111.9
57	1303058-1A 100X									668385.48	112.1
58	1303058-2 100X									642231.75	107.7
59	1303058-3 100X									641012.02	107.5
60	1303058-4 100X									642325.50	107.7
61	1303058-5 100X									649099.12	108.9
62	1303058-6 100X									674321.13	113.1

Batch Summary Report

ISTD Table

	Sample Name	71 Ga (ISTD) [1]		71 Ga (ISTD) [2]		72 Ge (ISTD) [1]		72 Ge (ISTD) [2]		103 Rh (ISTD) [1]	
		CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
63	1303058-7 100X									664323.77	111.4
64	1303058-8 100X									682071.68	114.4
65	1303058-9 100X									678373.82	113.8
66	CCV									654116.12	109.7
67	CCB									694033.30	116.4
68	1303058-10 100X									692964.29	116.2
69	1303058-11 100X									701067.98	117.6
70	1303058-12 100X									688321.92	115.5
71	1303058-13 100X									695847.57	116.7
72	1303058-14 100X									681208.27	114.3
73	1303059-1 100X									691726.81	116.0
74	1303059-1D 100X									681116.89	114.3
75	1303059-1L 500X									686752.23	115.2
76	1303059-1MS 1...									677238.19	113.6
77	1303059-1MSD ...									685127.44	114.9
78	CCV									691604.57	116.0
79	CCB									699729.42	117.4
80	1303059-1A 100X									689659.36	115.7
81	1303059-2 100X									701489.24	117.7
82	1303059-3 100X									689796.55	115.7
83	1303059-4 100X									681188.74	114.3
84	1303059-5 100X									692368.61	116.1
85	1303059-6 100X									685279.39	115.0
86	1303059-7 100X									696332.15	116.8
87	1303059-8 100X									696297.88	116.8
88	1303059-9 100X									702472.34	117.8
89	1303059-10 100X									695695.17	116.7
90	CCV									680100.61	114.1
91	CCB									592698.64	99.4
92	1303059-11 100X									630224.88	105.7
93	1303059-12 100X									634275.30	106.4

Batch Summary Report

ISTD Table

		71 Ga (ISTD) [1]		71 Ga (ISTD) [2]		72 Ge (ISTD) [1]		72 Ge (ISTD) [2]		103 Rh (ISTD) [1]	
	Sample Name	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
94	1303059-13 100X									642345.26	107.8
95	1303059-14 100X									607775.88	102.0
96	1303059-15 100X									605367.23	101.5
97	1303060-1 100X									626538.86	105.1
98	1303060-1D 100X									626461.23	105.1
99	1303060-1L 50X									596407.76	100.0
100	1303060-1MS 1...									609984.66	102.3
101	1303060-1MSD ...									615571.80	103.3
102	CCV									639755.00	107.3
103	CCB									578215.46	97.0
104	1303060-1A 100X									637172.24	106.9
105	1303060-2 100X									635031.89	106.5
106	1303060-3 100X									625961.32	105.0
107	1303060-4 100X									618572.40	103.8
108	1303060-5 100X									619863.05	104.0
109	1303060-6 100X									624249.21	104.7
110	1303060-7 100X									622794.16	104.5
111	1303060-8 100X									629652.87	105.6
112	1303060-9 100X									626622.45	105.1
113	1303060-10 100X									619867.40	104.0
114	CCV									642732.52	107.8
115	CCB									571272.96	95.8
116	1303060-11 100X									625781.62	105.0
117	1303060-12 100X									621213.79	104.2
118	CCV									645243.89	108.2
119	CCB									590580.57	99.1

Batch Summary Report

ISTD Table

		103 Rh (ISTD) [2]		115 In (ISTD) [1]		115 In (ISTD) [2]		195 Pt (ISTD) [1]		195 Pt (ISTD) [2]	
	Sample Name	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
1	blank	198364.48		632949.00		100282.94		393173.30		97231.29	
2	blank	200853.10	100.0	637808.91	100.0	100478.23	100.0	393174.83	100.0	96322.08	100.0
3	blank	198436.57	100.0	639826.94	100.0	98516.02	100.0	397270.53	100.0	97835.68	100.0
4	H/1000	205380.30	103.5	656970.93	102.7	103749.75	105.3	407234.06	102.5	101583.95	103.8
5	H/100	218177.99	109.9	690992.64	108.0	108606.05	110.2	428664.11	107.9	106454.28	108.8
6	H/10	220763.36	111.3	716894.13	112.0	111267.70	112.9	437398.49	110.1	107632.07	110.0
7	HIGH	216437.75	109.1	739765.47	115.6	113287.76	115.0	434615.39	109.4	106418.86	108.8
8	ZZZZZZ	199642.72	100.6	640462.22	100.1	98940.97	100.4	393386.56	99.0	97587.03	99.7
9	ICV	227076.06	114.4	753252.77	117.7	115186.36	116.9	468574.75	117.9	111418.03	113.9
10	ICB	207683.45	104.7	668727.48	104.5	103314.20	104.9	409274.56	103.0	99838.21	102.0
11	CRI1	229877.38	115.8	745039.65	116.4	113432.18	115.1	455615.47	114.7	110758.28	113.2
12	ICSA	235640.09	118.7	796643.98	124.5	122142.56	124.0	481949.80	121.3	116178.32	118.7
13	ICSAB	232599.55	117.2	777187.35	121.5	120387.90	122.2	472385.84	118.9	114580.01	117.1
14	ZZZZZZ	216096.77	108.9	685922.85	107.2	107934.62	109.6	425579.49	107.1	104544.12	106.9
15	IP130307-1MB ...	204889.71	103.3	677189.21	105.8	104606.64	106.2	420366.35	105.8	99922.92	102.1
16	1302343-1 10X	237851.92	119.9	755846.47	118.1	118371.76	120.2	462580.31	116.4	113330.57	115.8
17	1302347-1 10X	234508.76	118.2	753198.08	117.7	117905.32	119.7	463964.03	116.8	113327.39	115.8
18	1303056-2 10X	241931.21	121.9	798777.33	124.8	123015.37	124.9	478938.62	120.6	115178.99	117.7
19	1303056-2D 10X	248966.26	125.5	814812.37	127.3	125522.30	127.4	486672.24	122.5	118255.86	120.9
20	1303056-2L 50X	249792.35	125.9	789179.79	123.3	126185.25	128.1	475325.42	119.6	117684.88	120.3
21	CCV	246210.79	124.1	826694.79	129.2	124628.90	126.5	498955.62	125.6	119797.88	122.4
22	CCB	224935.63	113.4	732895.57	114.5	111449.12	113.1	453597.18	114.2	109489.97	111.9
23	F130301-1MB ...	218536.42	110.1	729070.05	113.9	109170.38	110.8	447438.12	112.6	107488.56	109.9
24	1303056-2MS 10X	239969.54	120.9	801042.61	125.2	121962.62	123.8	492348.43	123.9	116642.69	119.2
25	1303056-2MSD ...	244107.09	123.0	784650.55	122.6	122218.80	124.1	471308.19	118.6	115874.54	118.4
26	FM130301-1LC...	239147.58	120.5	768262.99	120.1	118614.16	120.4	474534.98	119.4	116616.69	119.2
27	IP130307-1LCS...	239782.98	120.8	769446.76	120.3	118307.36	120.1	473953.09	119.3	114935.82	117.5
28	1303045-1 10X	238044.00	120.0	773300.64	120.9	121265.43	123.1	468153.14	117.8	116693.40	119.3
29	1303044-1 10X	240324.21	121.1	779116.25	121.8	122126.27	124.0	473758.50	119.3	113774.44	116.3
30	CCV	241571.96	121.7	795426.67	124.3	122532.09	124.4	478252.13	120.4	116505.74	119.1
31	CCB	219396.97	110.6	702962.89	109.9	108791.92	110.4	434566.72	109.4	105040.47	107.4

Batch Summary Report

ISTD Table

		103 Rh (ISTD) [2]		115 In (ISTD) [1]		115 In (ISTD) [2]		195 Pt (ISTD) [1]		195 Pt (ISTD) [2]	
	Sample Name	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
32	1303028-3 10X	240269.93	121.1	780430.76	122.0	121617.11	123.4	472196.41	118.9	114119.79	116.6
33	1303028-3L 50X	240196.62	121.0	775526.20	121.2	121090.50	122.9	470657.87	118.5	117218.74	119.8
34	1303028-3MS 10X	242800.30	122.4	790870.68	123.6	122087.12	123.9	480016.39	120.8	115473.88	118.0
35	1303028-1 10X	237914.38	119.9	791537.09	123.7	122189.84	124.0	480493.07	120.9	114691.58	117.2
36	1303028-2 10X	237617.87	119.7	783194.44	122.4	118848.44	120.6	471117.65	118.6	115843.07	118.4
37	1303046-1 10X	236823.01	119.3	779316.01	121.8	119450.30	121.2	469996.89	118.3	113364.81	115.9
38	1303029-1 10X	239872.03	120.9	784931.53	122.7	119922.38	121.7	475154.60	119.6	115591.13	118.1
39	1303029-2 10X	232774.33	117.3	777141.65	121.5	120031.75	121.8	467936.01	117.8	113009.39	115.5
40	1303030-1 10X	234459.87	118.2	780104.17	121.9	117663.45	119.4	480405.37	120.9	113029.01	115.5
41	1303028-3MSD ...	235137.05	118.5	776779.79	121.4	118596.56	120.4	477555.02	120.2	114382.99	116.9
42	CCV	231458.94	116.6	771359.36	120.6	117794.41	119.6	465698.02	117.2	112740.51	115.2
43	CCB	220577.67	111.2	711486.04	111.2	111488.74	113.2	437488.32	110.1	106329.74	108.7
44	IP130307-2MB ...			683206.29	106.8			423613.80	106.6		
45	IP130307-3MB ...			702574.66	109.8			433760.41	109.2		
46	IP130307-4MB ...			679979.48	106.3			420052.15	105.7		
47	IM130307-2LCS...			734483.96	114.8			453746.67	114.2		
48	IM130307-3LCS...			731412.02	114.3			453014.29	114.0		
49	IM130307-4LCS...			721274.49	112.7			443554.26	111.7		
50	1303058-1 100X			728721.87	113.9			449665.03	113.2		
51	1303058-1D 100X			736477.83	115.1			459620.88	115.7		
52	1303058-1L 500X			730341.24	114.1			457858.55	115.3		
53	1303058-1MS 1...			727260.99	113.7			455757.57	114.7		
54	CCV			732914.30	114.5			455198.16	114.6		
55	CCB			653905.01	102.2			409746.70	103.1		
56	1303058-1MSD ...			736948.89	115.2			455191.84	114.6		
57	1303058-1A 100X			740363.45	115.7			467002.86	117.6		
58	1303058-2 100X			710647.09	111.1			441475.63	111.1		
59	1303058-3 100X			716312.79	112.0			440844.45	111.0		
60	1303058-4 100X			714747.57	111.7			440642.62	110.9		
61	1303058-5 100X			718287.79	112.3			448591.30	112.9		
62	1303058-6 100X			745429.90	116.5			466316.30	117.4		

Batch Summary Report

ISTD Table

		103 Rh (ISTD) [2]		115 In (ISTD) [1]		115 In (ISTD) [2]		195 Pt (ISTD) [1]		195 Pt (ISTD) [2]	
	Sample Name	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
63	1303058-7 100X			737309.77	115.2			458165.76	115.3		
64	1303058-8 100X			753130.00	117.7			463213.48	116.6		
65	1303058-9 100X			755818.91	118.1			468108.13	117.8		
66	CCV			733361.37	114.6			452948.14	114.0		
67	CCB			765207.35	119.6			476525.03	119.9		
68	1303058-10 100X			772257.14	120.7			473068.48	119.1		
69	1303058-11 100X			774565.49	121.1			475495.81	119.7		
70	1303058-12 100X			758855.68	118.6			471377.31	118.7		
71	1303058-13 100X			768671.55	120.1			474146.91	119.4		
72	1303058-14 100X			749418.48	117.1			467011.19	117.6		
73	1303059-1 100X			775819.13	121.3			472059.60	118.8		
74	1303059-1D 100X			763864.47	119.4			471809.42	118.8		
75	1303059-1L 500X			768892.29	120.2			473726.74	119.2		
76	1303059-1MS 1...			758215.44	118.5			467302.30	117.6		
77	1303059-1MSD ...			761177.30	119.0			468551.86	117.9		
78	CCV			769475.46	120.3			476008.76	119.8		
79	CCB			762536.46	119.2			472620.12	119.0		
80	1303059-1A 100X			762286.66	119.1			474344.41	119.4		
81	1303059-2 100X			771641.61	120.6			476588.97	120.0		
82	1303059-3 100X			760096.85	118.8			474954.49	119.6		
83	1303059-4 100X			754460.74	117.9			468886.18	118.0		
84	1303059-5 100X			771560.91	120.6			470709.49	118.5		
85	1303059-6 100X			756617.64	118.3			465535.94	117.2		
86	1303059-7 100X			770894.56	120.5			471938.32	118.8		
87	1303059-8 100X			768572.05	120.1			475508.39	119.7		
88	1303059-9 100X			774267.61	121.0			478878.59	120.5		
89	1303059-10 100X			768993.35	120.2			473692.64	119.2		
90	CCV			761212.68	119.0			467791.45	117.8		
91	CCB			645773.51	100.9			402062.02	101.2		
92	1303059-11 100X			696653.72	108.9			423914.77	106.7		
93	1303059-12 100X			697108.21	109.0			429632.65	108.1		

Batch Summary Report

ISTD Table

		103 Rh (ISTD) [2]		115 In (ISTD) [1]		115 In (ISTD) [2]		195 Pt (ISTD) [1]		195 Pt (ISTD) [2]	
	Sample Name	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%	CPS	Recovery%
94	1303059-13 100X			706131.51	110.4			432095.85	108.8		
95	1303059-14 100X			672555.25	105.1			415151.27	104.5		
96	1303059-15 100X			668223.65	104.4			414653.73	104.4		
97	1303060-1 100X			693171.30	108.3			426305.73	107.3		
98	1303060-1D 100X			686771.88	107.3			432251.44	108.8		
99	1303060-1L 50X			658966.02	103.0			411900.52	103.7		
100	1303060-1MS 1...			680771.32	106.4			419049.51	105.5		
101	1303060-1MSD ...			676969.19	105.8			421987.52	106.2		
102	CCV			711803.68	111.2			440118.42	110.8		
103	CCB			639682.72	100.0			398580.01	100.3		
104	1303060-1A 100X			704154.52	110.1			437060.19	110.0		
105	1303060-2 100X			699913.82	109.4			429792.77	108.2		
106	1303060-3 100X			692803.90	108.3			430765.61	108.4		
107	1303060-4 100X			690542.22	107.9			424844.25	106.9		
108	1303060-5 100X			693370.29	108.4			428833.99	107.9		
109	1303060-6 100X			691131.15	108.0			425543.12	107.1		
110	1303060-7 100X			687985.99	107.5			427334.28	107.6		
111	1303060-8 100X			697788.17	109.1			426586.03	107.4		
112	1303060-9 100X			693014.87	108.3			428876.05	108.0		
113	1303060-10 100X			688058.40	107.5			425450.91	107.1		
114	CCV			711624.47	111.2			441698.39	111.2		
115	CCB			629271.80	98.4			390864.36	98.4		
116	1303060-11 100X			690413.38	107.9			426761.87	107.4		
117	1303060-12 100X			692774.69	108.3			423745.52	106.7		
118	CCV			716849.14	112.0			439707.99	110.7		
119	CCB			642420.30	100.4			403314.18	101.5		

Batch Summary Report

ISTD Table

	Sample Name	209 Bi (ISTD) [1]		209 Bi (ISTD) [2]	
		CPS	Recovery%	CPS	Recovery%
1	blank	354758.20		115112.05	
2	blank	360534.21	100.0	115532.85	100.0
3	blank	360196.53	100.0	114189.44	100.0
4	H/1000	372560.50	103.4	120793.57	105.8
5	H/100	393122.97	109.1	127877.12	112.0
6	H/10	399648.56	111.0	129531.78	113.4
7	HIGH	396167.39	110.0	125918.95	110.3
8	ZZZZZZ	356840.45	99.1	115371.72	101.0
9	ICV	413349.50	114.8	131592.59	115.2
10	ICB	368282.98	102.2	119050.39	104.3
11	CRII	411698.12	114.3	132998.65	116.5
12	ICSA	433477.61	120.3	137582.03	120.5
13	ICSAB	420421.16	116.7	134487.05	117.8
14	ZZZZZZ	383813.85	106.6	125381.79	109.8
15	IP130307-1MB ...	382476.25	106.2	118978.98	104.2
16	1302343-1 10X	423089.41	117.5	137470.45	120.4
17	1302347-1 10X	427394.92	118.7	137239.22	120.2
18	1303056-2 10X	431766.78	119.9	137592.55	120.5
19	1303056-2D 10X	444420.71	123.4	140428.11	123.0
20	1303056-2L 50X	431839.83	119.9	138127.58	121.0
21	CCV	442903.17	123.0	140563.19	123.1
22	CCB	406570.25	112.9	127879.12	112.0
23	F130301-1MB ...	402450.94	111.7	124797.17	109.3
24	1303056-2MS 10X	440637.23	122.3	138278.68	121.1
25	1303056-2MSD ...	426892.20	118.5	137737.28	120.6
26	FM130301-1LC...	425160.76	118.0	136875.91	119.9
27	IP130307-1LCS...	427910.06	118.8	137627.67	120.5
28	1303045-1 10X	425195.36	118.0	137305.91	120.2
29	1303044-1 10X	423664.98	117.6	136208.01	119.3
30	CCV	437212.24	121.4	138726.66	121.5
31	CCB	392324.86	108.9	126864.91	111.1

Batch Summary Report

ISTD Table

	Sample Name	209 Bi (ISTD) [1]		209 Bi (ISTD) [2]	
		CPS	Recovery%	CPS	Recovery%
32	1303028-3 10X	431242.57	119.7	137075.19	120.0
33	1303028-3L 50X	429891.39	119.3	137968.16	120.8
34	1303028-3MS 10X	432574.33	120.1	137319.98	120.3
35	1303028-1 10X	420086.49	116.6	133768.33	117.1
36	1303028-2 10X	429930.38	119.4	137666.81	120.6
37	1303046-1 10X	424117.61	117.7	134511.90	117.8
38	1303029-1 10X	424395.24	117.8	133774.34	117.2
39	1303029-2 10X	418712.96	116.2	133010.91	116.5
40	1303030-1 10X	419479.34	116.5	132523.72	116.1
41	1303028-3MSD ...	430402.67	119.5	135166.97	118.4
42	CCV	425126.01	118.0	137592.83	120.5
43	CCB	395481.87	109.8	127950.39	112.1
44	IP130307-2MB ...	373795.22	103.8		
45	IP130307-3MB ...	387582.60	107.6		
46	IP130307-4MB ...	375047.64	104.1		
47	IM130307-2LCS...	405403.77	112.6		
48	IM130307-3LCS...	402491.52	111.7		
49	IM130307-4LCS...	399395.16	110.9		
50	1303058-1 100X	415506.22	115.4		
51	1303058-1D 100X	425841.28	118.2		
52	1303058-1L 500X	415767.55	115.4		
53	1303058-1MS 1...	417667.64	116.0		
54	CCV	411502.08	114.2		
55	CCB	369716.89	102.6		
56	1303058-1MSD ...	423455.75	117.6		
57	1303058-1A 100X	418261.74	116.1		
58	1303058-2 100X	409629.88	113.7		
59	1303058-3 100X	410253.93	113.9		
60	1303058-4 100X	413694.24	114.9		
61	1303058-5 100X	412652.46	114.6		
62	1303058-6 100X	423673.65	117.6		

Batch Summary Report

ISTD Table

		209 Bi (ISTD) [1]		209 Bi (ISTD) [2]	
	Sample Name	CPS	Recovery%	CPS	Recovery%
63	1303058-7 100X	422963.43	117.4		
64	1303058-8 100X	431423.12	119.8		
65	1303058-9 100X	433448.78	120.3		
66	CCV	416417.52	115.6		
67	CCB	432315.14	120.0		
68	1303058-10 100X	437779.66	121.5		
69	1303058-11 100X	439984.95	122.2		
70	1303058-12 100X	434345.34	120.6		
71	1303058-13 100X	434923.85	120.7		
72	1303058-14 100X	429308.32	119.2		
73	1303059-1 100X	439526.63	122.0		
74	1303059-1D 100X	436006.09	121.0		
75	1303059-1L 500X	437546.21	121.5		
76	1303059-1MS 1...	430491.91	119.5		
77	1303059-1MSD ...	434927.30	120.7		
78	CCV	431651.95	119.8		
79	CCB	426523.50	118.4		
80	1303059-1A 100X	434493.40	120.6		
81	1303059-2 100X	438301.24	121.7		
82	1303059-3 100X	434885.62	120.7		
83	1303059-4 100X	430297.49	119.5		
84	1303059-5 100X	434964.15	120.8		
85	1303059-6 100X	431708.90	119.9		
86	1303059-7 100X	436496.78	121.2		
87	1303059-8 100X	434453.73	120.6		
88	1303059-9 100X	441065.43	122.5		
89	1303059-10 100X	437231.32	121.4		
90	CCV	424517.58	117.9		
91	CCB	365751.78	101.5		
92	1303059-11 100X	390727.34	108.5		
93	1303059-12 100X	395215.02	109.7		

Batch Summary Report

ISTD Table

	Sample Name	209 Bi (ISTD) [1]		209 Bi (ISTD) [2]	
		CPS	Recovery%	CPS	Recovery%
94	1303059-13 100X	399405.34	110.9		
95	1303059-14 100X	379466.54	105.3		
96	1303059-15 100X	379148.47	105.3		
97	1303060-1 100X	398330.87	110.6		
98	1303060-1D 100X	394465.63	109.5		
99	1303060-1L 50X	378606.68	105.1		
100	1303060-1MS 1...	387625.70	107.6		
101	1303060-1MSD ...	390454.67	108.4		
102	CCV	397961.69	110.5		
103	CCB	360636.35	100.1		
104	1303060-1A 100X	397835.03	110.4		
105	1303060-2 100X	396725.38	110.1		
106	1303060-3 100X	394908.00	109.6		
107	1303060-4 100X	393280.62	109.2		
108	1303060-5 100X	397156.99	110.3		
109	1303060-6 100X	397352.51	110.3		
110	1303060-7 100X	394418.59	109.5		
111	1303060-8 100X	398093.76	110.5		
112	1303060-9 100X	393978.52	109.4		
113	1303060-10 100X	390201.66	108.3		
114	CCV	400292.42	111.1		
115	CCB	357401.71	99.2		
116	1303060-11 100X	396041.94	110.0		
117	1303060-12 100X	390043.92	108.3		
118	CCV	400995.95	111.3		
119	CCB	363288.73	100.9		

Batch Folder: C:\ICPMH\1\DATA\13C08m01.B\

Analysis File: 13C08m01.batch.xml

DA Date-Time: 3/11/2013 10:10:51 AM

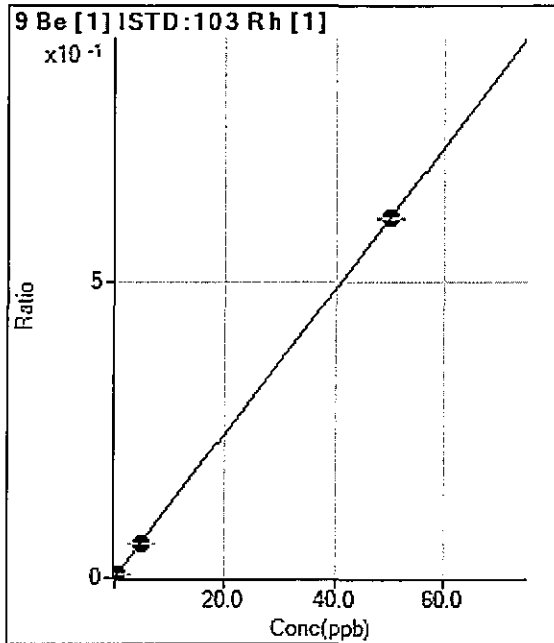
Calibration Title:

Calibration Method: External Calibration

VIS Interpolation Fit:

Tune Step: #1 nogas.u
#2 hehe.u

Level	Standard Data File	Sample Name	Acq. Date-Time
1	003CALB.D	blank	3/8/2013 12:35:05 PM
2	004CALS.D	H/1000	3/8/2013 12:38:08 PM
3	005CALS.D	H/100	3/8/2013 12:41:15 PM
4	006CALS.D	H/10	3/8/2013 12:44:19 PM
5	007CALS.D	HIGH	3/8/2013 12:47:21 PM
6			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	52.00	0.0001	P	15.3
2	<input type="checkbox"/>	0.050	0.048	406.68	0.0007	P	10.8
3	<input type="checkbox"/>	0.500	0.474	3727.11	0.0058	P	2.2
4	<input type="checkbox"/>	5.000	4.740	37808.03	0.0577	P	1.2
5	<input type="checkbox"/>	50.000	50.026	398033.93	0.6077	P	0.6
6	<input type="checkbox"/>	10.000					

$$y = 0.0121 * x + 8.7111E-005$$

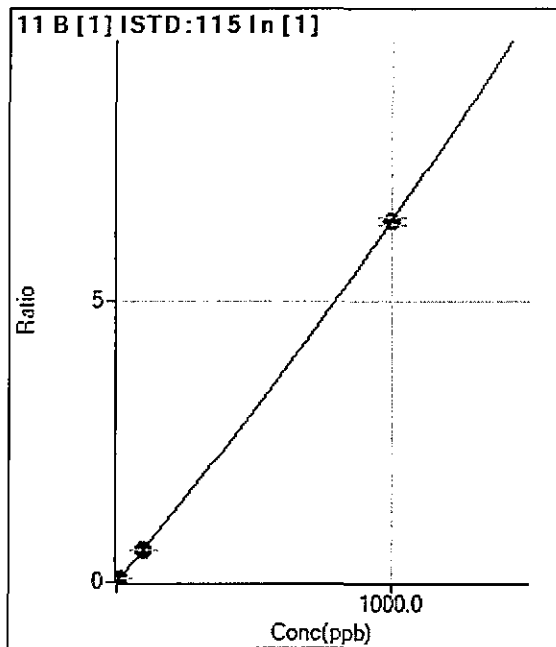
$$R = 1.0000$$

$$DL = 0.0033$$

$$BEC = 0.007172$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	-0.307	834.48	0.0013	P	6.7
2	<input type="checkbox"/>	1.000	0.855	5263.09	0.0080	P	1.2
3	<input type="checkbox"/>	10.000	10.504	44064.68	0.0638	P	2.1
4	<input type="checkbox"/>	100.000	99.947	420271.19	0.5862	P	1.2
5	<input type="checkbox"/>	1000.000	1000.000	4744988.42	6.4137	A	2.2
6	<input type="checkbox"/>	200.000					

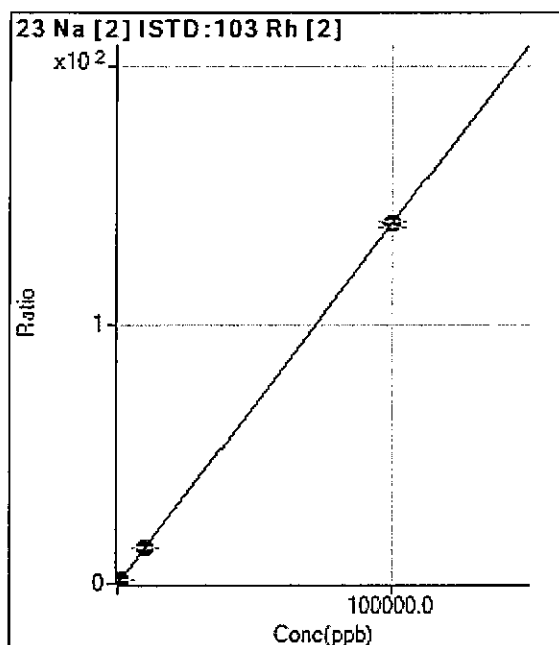
$$y = 6.3972E-007 * x^2 + 0.0058 * x + 0.0031$$

$$DL = 0.04515$$

$$BEC = 0.533$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	10877.35	0.0548	P	3.6
2	<input type="checkbox"/>	100.000	97.046	38876.33	0.1893	P	0.8
3	<input type="checkbox"/>	1000.000	984.380	309591.82	1.4189	P	0.9
4	<input type="checkbox"/>	10000.000	9892.168	3038029.95	13.7631	A	1.5
5	<input type="checkbox"/>	100000.000	100010.942	30007005.39	138.6472	A	1.5
6	<input type="checkbox"/>	20000.000					

$$y = 0.0014 * x + 0.0548$$

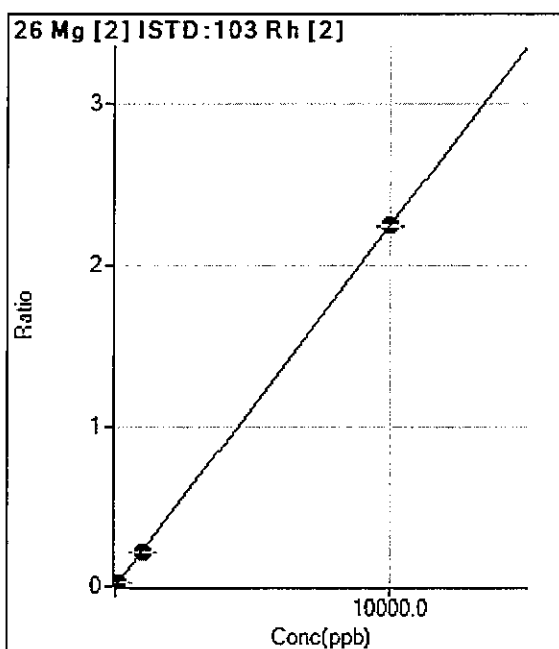
R = 1.0000

DL = 4.283

BEC = 39.56

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	0.00	0.0000	P	
2	<input type="checkbox"/>	10.000	9.846	453.37	0.0022	P	15.1
3	<input type="checkbox"/>	100.000	94.543	4620.86	0.0212	P	9.6
4	<input type="checkbox"/>	1000.000	941.095	46525.34	0.2107	P	1.0
5	<input type="checkbox"/>	10000.000	10005.945	484965.82	2.2407	P	0.5
6	<input type="checkbox"/>	2000.000					

$$y = 2.2393E-004 * x + 0.0000E+000$$

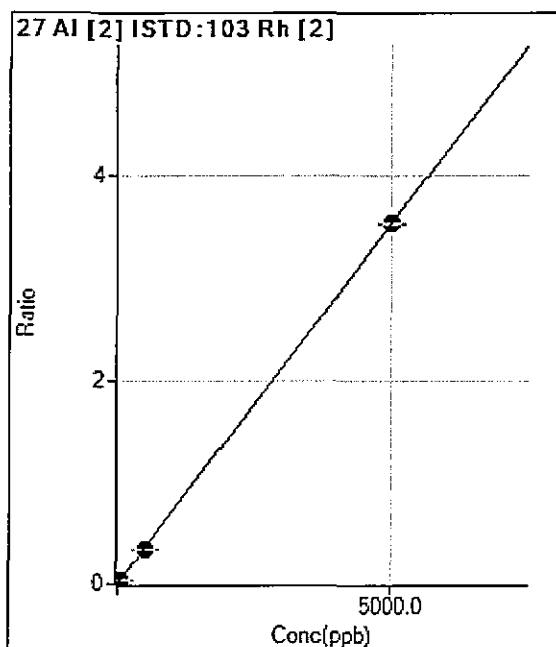
R = 1.0000

DL = 0

BEC = 0

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	100.01	0.0005	P	30.5
2	<input type="checkbox"/>	5.000	4.337	730.05	0.0036	P	5.8
3	<input type="checkbox"/>	50.000	48.346	7532.00	0.0345	P	2.9
4	<input type="checkbox"/>	500.000	476.342	74100.78	0.3356	P	0.4
5	<input type="checkbox"/>	5000.000	5002.383	761893.22	3.5201	P	0.6
6	<input type="checkbox"/>	1000.000					

$$y = 7.0358E-004 * x + 5.0450E-004$$

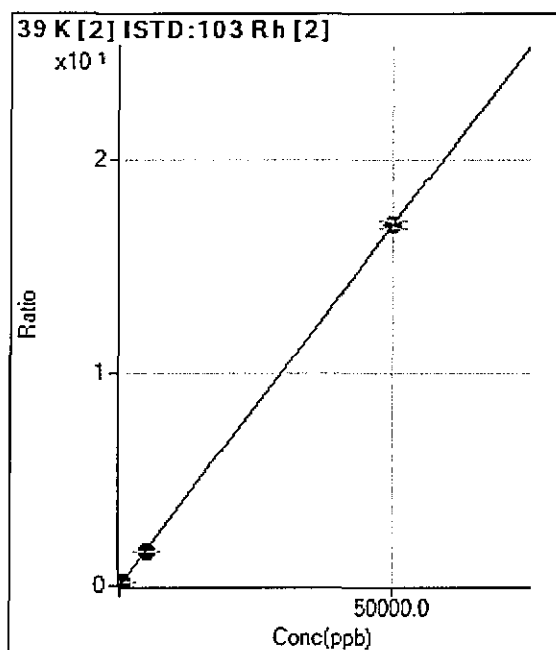
$$R = 1.0000$$

$$DL = 0.6555$$

$$BEC = 0.717$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	4624.21	0.0233	P	4.4
2	<input type="checkbox"/>	50.000	34.902	7205.17	0.0351	P	0.7
3	<input type="checkbox"/>	500.000	468.985	39628.19	0.1816	P	2.1
4	<input type="checkbox"/>	5000.000	4694.073	354995.63	1.6080	P	1.1
5	<input type="checkbox"/>	50000.000	50030.918	3660925.78	16.9134	A	2.2
6	<input type="checkbox"/>	10000.000					

$$y = 3.3759E-004 * x + 0.0233$$

$$R = 1.0000$$

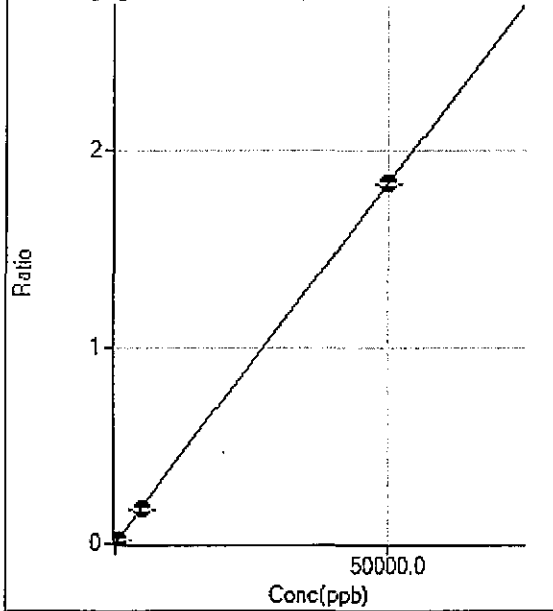
$$DL = 9.163$$

$$BEC = 69.02$$

Weight: None

Min Conc: <None>

44 Ca [2] ISTD:103 Rh [2]



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	14.71	0.0001	P	109.8
2	<input type="checkbox"/>	50.000	46.823	367.39	0.0018	P	11.0
3	<input type="checkbox"/>	500.000	467.773	3755.87	0.0172	P	10.1
4	<input type="checkbox"/>	5000.000	4676.854	37862.22	0.1715	P	1.7
5	<input type="checkbox"/>	50000.000	50032.640	396977.17	1.8341	P	0.3
6	<input type="checkbox"/>	10000.000					

$$y = 3.6657E-005 * x + 7.4013E-005$$

R = 1.0000

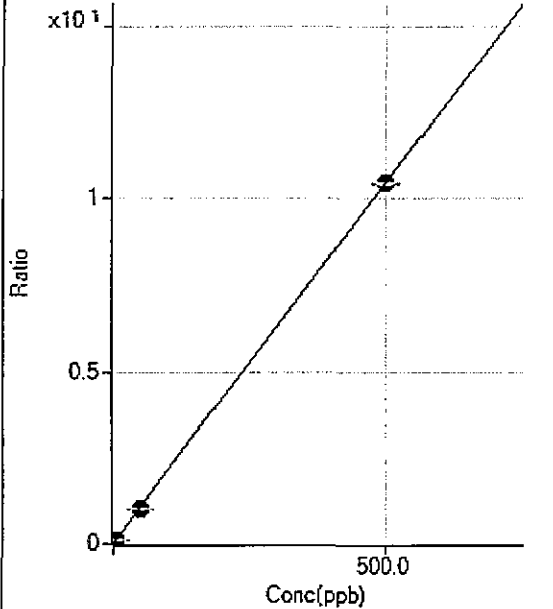
DL = 6.65

BEC = 2.019

Weight: None

Min Conc: <None>

52 Cr [2] ISTD:103 Rh [2]



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	2652.48	0.0134	P	6.8
2	<input type="checkbox"/>	0.500	0.508	4920.80	0.0240	P	5.1
3	<input type="checkbox"/>	5.000	4.861	25038.05	0.1148	P	0.4
4	<input type="checkbox"/>	50.000	47.968	223807.92	1.0138	P	0.7
5	<input type="checkbox"/>	500.000	500.205	2260848.52	10.4461	A	0.8
6	<input type="checkbox"/>	100.000					

$$y = 0.0209 * x + 0.0134$$

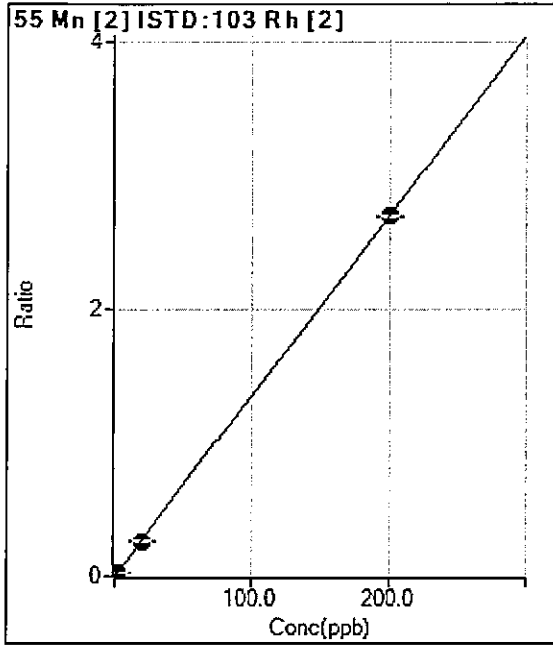
R = 1.0000

DL = 0.1301

BEC = 0.641

Weight: None

Min Conc: <None>



	R _{ct}	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	80.00	0.0004	P	21.8
2	<input type="checkbox"/>	0.200	0.200	636.69	0.0031	P	3.1
3	<input type="checkbox"/>	2.000	1.965	5871.13	0.0269	P	1.5
4	<input type="checkbox"/>	20.000	19.525	58243.49	0.2638	P	1.2
5	<input type="checkbox"/>	200.000	200.048	584276.80	2.6996	P	0.4
6	<input type="checkbox"/>	40.000					

$$y = 0.0135 * x + 4.0298E-004$$

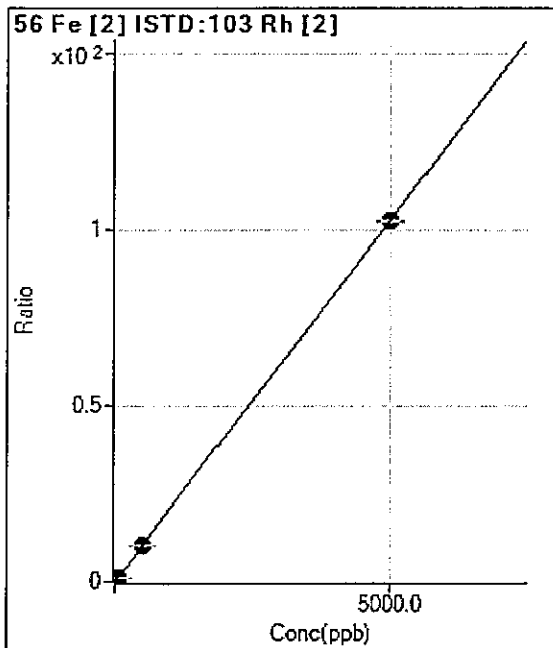
$$R = 1.0000$$

$$DL = 0.01953$$

$$BEC = 0.02987$$

Weight: None

Min Conc: <None>



	R _{ct}	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	2670.35	0.0135	P	5.9
2	<input type="checkbox"/>	5.000	5.935	27761.02	0.1352	P	4.4
3	<input type="checkbox"/>	50.000	51.878	235048.96	1.0773	P	1.2
4	<input type="checkbox"/>	500.000	495.182	2244758.51	10.1682	A	0.6
5	<input type="checkbox"/>	5000.000	5000.462	22197683.00	102.5584	A	0.2
6	<input type="checkbox"/>	1000.000					

$$y = 0.0205 * x + 0.0135$$

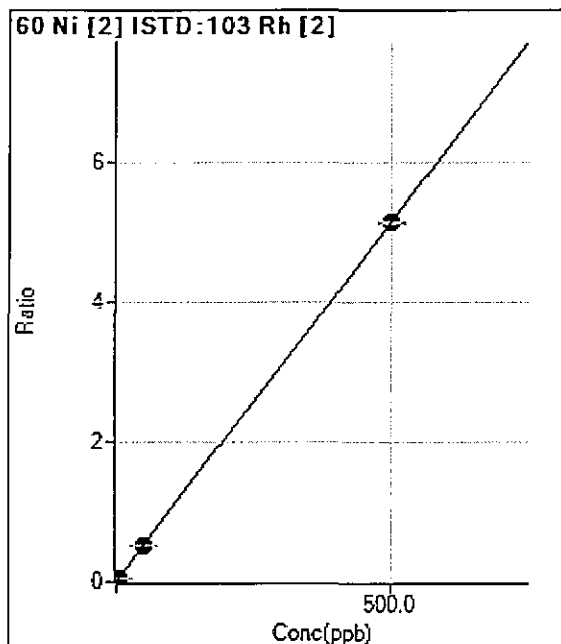
$$R = 1.0000$$

$$DL = 0.1164$$

$$BEC = 0.6563$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	534.46	0.0027	P	13.8
2	<input type="checkbox"/>	0.500	0.440	1482.31	0.0072	P	3.7
3	<input type="checkbox"/>	5.000	4.934	11640.92	0.0533	P	2.9
4	<input type="checkbox"/>	50.000	49.950	113789.95	0.5155	P	1.1
5	<input type="checkbox"/>	500.000	500.006	1111548.43	5.1357	P	0.8
6	<input type="checkbox"/>	100.000					

$$y = 0.0103 * x + 0.0027$$

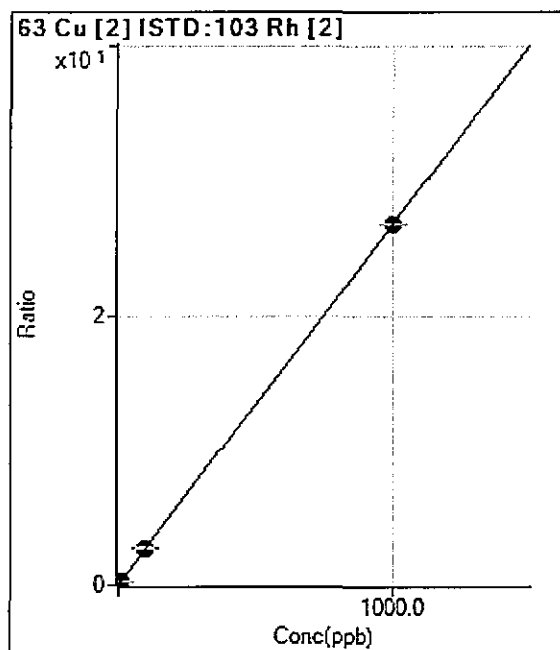
$$R = 1.0000$$

$$DL = 0.1089$$

$$BEC = 0.2625$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	1020.05	0.0051	P	7.6
2	<input type="checkbox"/>	1.000	1.090	7036.07	0.0343	P	1.8
3	<input type="checkbox"/>	10.000	10.801	64084.61	0.2937	P	0.6
4	<input type="checkbox"/>	100.000	102.977	608486.97	2.7564	P	0.5
5	<input type="checkbox"/>	1000.000	999.694	5781987.27	26.7142	A	0.1
6	<input type="checkbox"/>	200.000					

$$y = 0.0267 * x + 0.0051$$

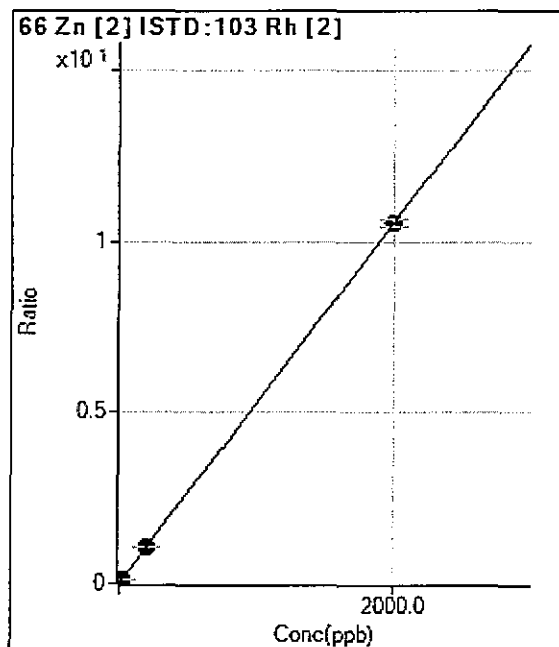
$$R = 1.0000$$

$$DL = 0.04372$$

$$BEC = 0.1925$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	566.70	0.0029	P	29.0
2	<input type="checkbox"/>	2.000	1.757	2483.63	0.0121	P	8.0
3	<input type="checkbox"/>	20.000	21.134	24866.77	0.1140	P	0.8
4	<input type="checkbox"/>	200.000	203.119	236396.91	1.0707	P	1.2
5	<input type="checkbox"/>	2000.000	1999.677	2276149.44	10.5160	A	2.1
6	<input type="checkbox"/>	400.000					

$$y = 0.0053 * x + 0.0029$$

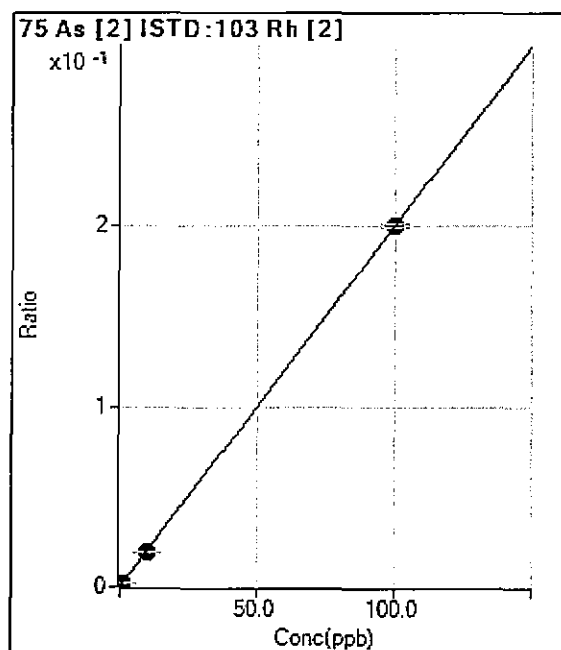
$$R = 1.0000$$

$$DL = 0.4732$$

$$BEC = 0.5437$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	1.00	0.0000	P	99.7
2	<input type="checkbox"/>	0.100	0.106	44.33	0.0002	P	22.4
3	<input type="checkbox"/>	1.000	0.939	410.01	0.0019	P	1.9
4	<input type="checkbox"/>	10.000	9.691	4272.91	0.0194	P	0.8
5	<input type="checkbox"/>	100.000	100.031	43231.95	0.1997	P	1.0
6	<input type="checkbox"/>	20.000					

$$y = 0.0020 * x + 5.0285E-006$$

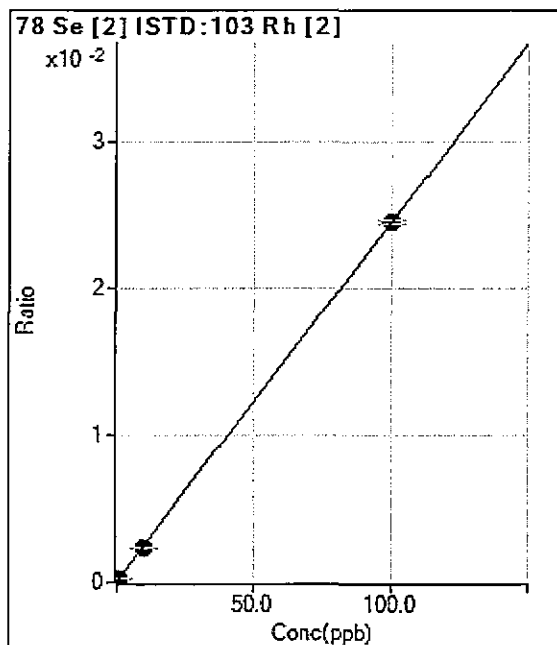
$$R = 1.0000$$

$$DL = 0.007529$$

$$BEC = 0.002518$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	9.07	0.0000	P	17.4
2	<input type="checkbox"/>	0.100	0.116	15.20	0.0001	P	24.5
3	<input type="checkbox"/>	1.000	0.923	59.20	0.0003	P	10.0
4	<input type="checkbox"/>	10.000	9.506	523.08	0.0024	P	1.8
5	<input type="checkbox"/>	100.000	100.050	5303.14	0.0245	P	1.1
6	<input type="checkbox"/>	20.000					

$$y = 2.4443\text{E-}004 * x + 4.5671\text{E-}005$$

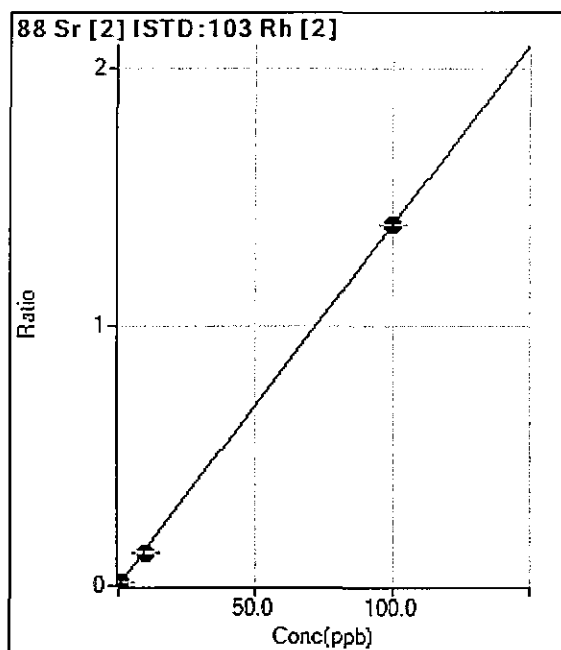
$$R = 1.0000$$

$$DL = 0.09759$$

$$BEC = 0.1868$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	86.67	0.0004	P	46.8
2	<input type="checkbox"/>	0.100	0.113	413.36	0.0020	P	11.6
3	<input type="checkbox"/>	1.000	1.015	3173.81	0.0146	P	7.4
4	<input type="checkbox"/>	10.000	9.242	28459.73	0.1290	P	4.7
5	<input type="checkbox"/>	100.000	100.076	301293.61	1.3921	P	0.1
6	<input type="checkbox"/>	20.000					

$$y = 0.0139 * x + 4.3713\text{E-}004$$

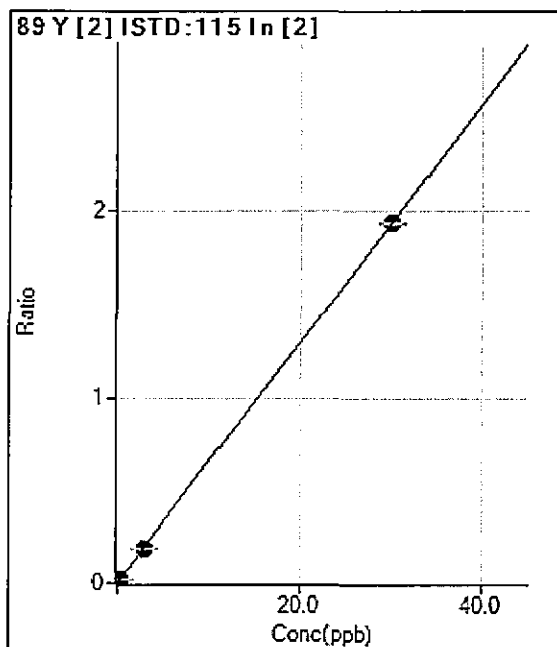
$$R = 1.0000$$

$$DL = 0.04412$$

$$BEC = 0.03144$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	0.00	0.0000	P	
2	<input type="checkbox"/>	0.030	0.029	193.35	0.0019	P	35.3
3	<input type="checkbox"/>	0.300	0.327	2296.94	0.0211	P	4.0
4	<input type="checkbox"/>	3.000	2.861	20574.14	0.1849	P	1.6
5	<input type="checkbox"/>	30.000	30.014	219735.99	1.9396	P	0.4
6	<input type="checkbox"/>	6.000					

$$y = 0.0646 * x + 0.0000E+000$$

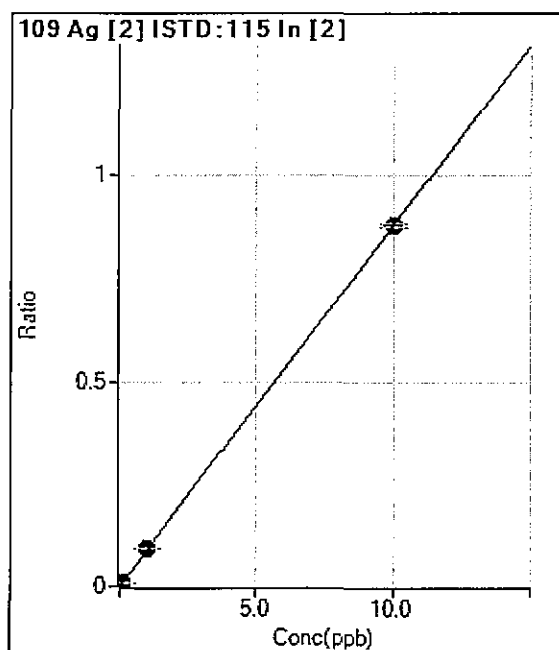
$$R = 1.0000$$

$$DL = 0$$

$$BEC = 0$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	13.33	0.0001	P	50.7
2	<input type="checkbox"/>	0.010	0.011	116.67	0.0011	P	16.1
3	<input type="checkbox"/>	0.100	0.107	1037.83	0.0096	P	7.0
4	<input type="checkbox"/>	1.000	1.047	10264.58	0.0922	P	0.7
5	<input type="checkbox"/>	10.000	9.995	99602.64	0.8793	P	0.9
6	<input type="checkbox"/>	2.000					

$$y = 0.0880 * x + 1.3560E-004$$

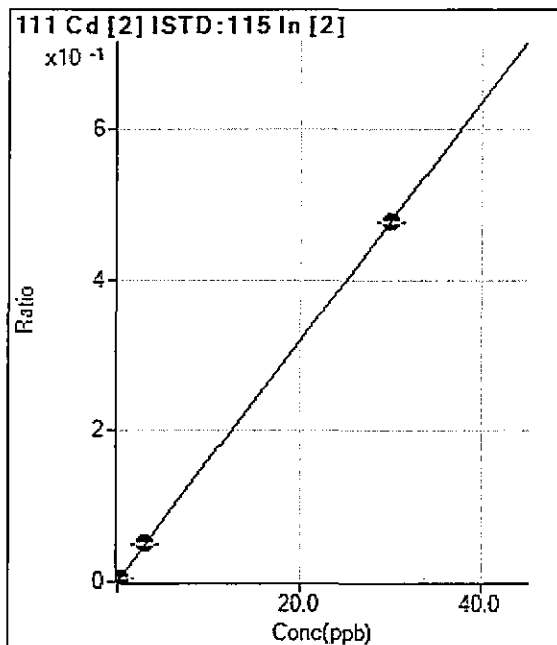
$$R = 1.0000$$

$$DL = 0.002344$$

$$BEC = 0.001542$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	0.66	0.0000	P	175.8
2	<input type="checkbox"/>	0.030	0.030	50.51	0.0005	P	12.4
3	<input type="checkbox"/>	0.300	0.324	563.03	0.0052	P	2.5
4	<input type="checkbox"/>	3.000	3.131	5559.11	0.0500	P	3.8
5	<input type="checkbox"/>	30.000	29.987	54224.01	0.4786	P	0.5
6	<input type="checkbox"/>	6.000					

$$y = 0.0160 * x + 6.6929E-006$$

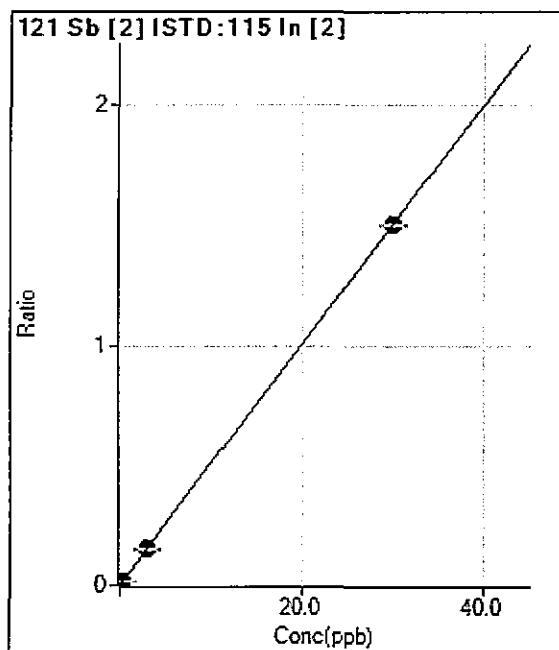
$$R = 1.0000$$

$$DL = 0.002212$$

$$BEC = 0.0004193$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	5.55	0.0001	P	125.2
2	<input type="checkbox"/>	0.030	0.027	148.89	0.0014	P	18.7
3	<input type="checkbox"/>	0.300	0.322	1762.35	0.0162	P	3.6
4	<input type="checkbox"/>	3.000	2.979	16637.94	0.1496	P	3.4
5	<input type="checkbox"/>	30.000	30.002	170598.24	1.5059	P	0.6
6	<input type="checkbox"/>	6.000					

$$y = 0.0502 * x + 5.6227E-005$$

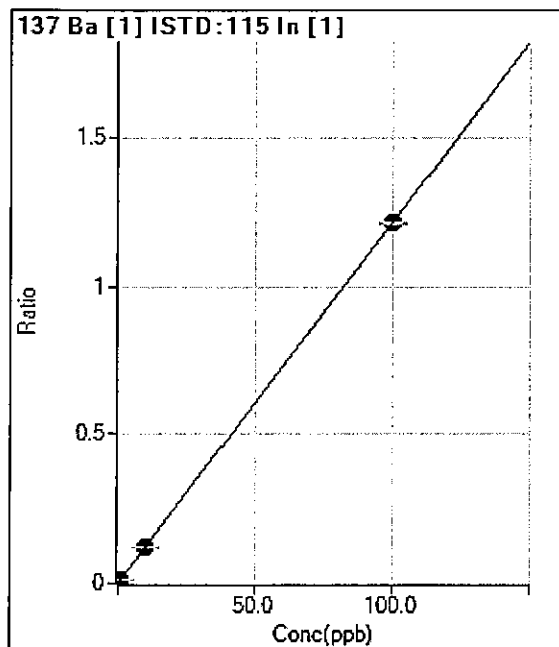
$$R = 1.0000$$

$$DL = 0.004208$$

$$BEC = 0.00112$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	100.01	0.0002	P	37.4
2	<input type="checkbox"/>	0.100	0.127	1116.76	0.0017	P	12.2
3	<input type="checkbox"/>	1.000	1.032	8762.94	0.0127	P	4.6
4	<input type="checkbox"/>	10.000	9.904	86263.89	0.1203	P	0.9
5	<input type="checkbox"/>	100.000	100.009	897821.39	1.2137	P	0.5
6	<input type="checkbox"/>	20.000					

$$y = 0.0121 * x + 1.5677E-004$$

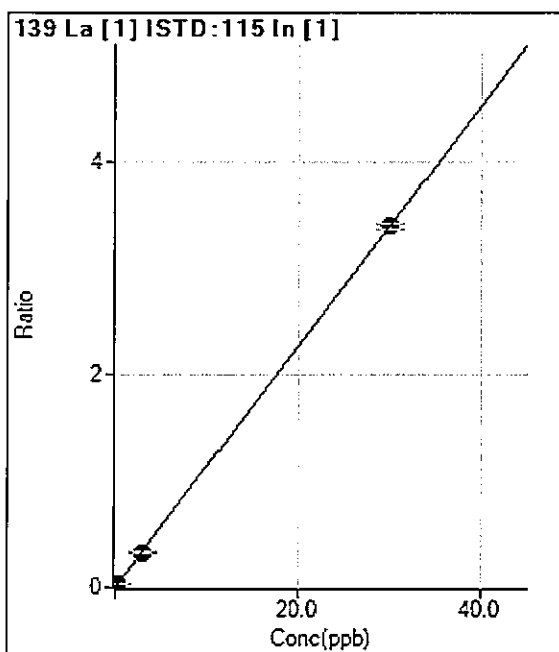
R = 1.0000

DL = 0.01451

BEC = 0.01292

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	563.37	0.0009	P	7.9
2	<input type="checkbox"/>	0.030	0.029	2763.71	0.0042	P	8.5
3	<input type="checkbox"/>	0.300	0.308	24680.77	0.0357	P	1.7
4	<input type="checkbox"/>	3.000	2.931	238419.33	0.3326	P	1.2
5	<input type="checkbox"/>	30.000	30.007	2513328.35	3.3973	A	1.6
6	<input type="checkbox"/>	6.000					

$$y = 0.1132 * x + 8.8107E-004$$

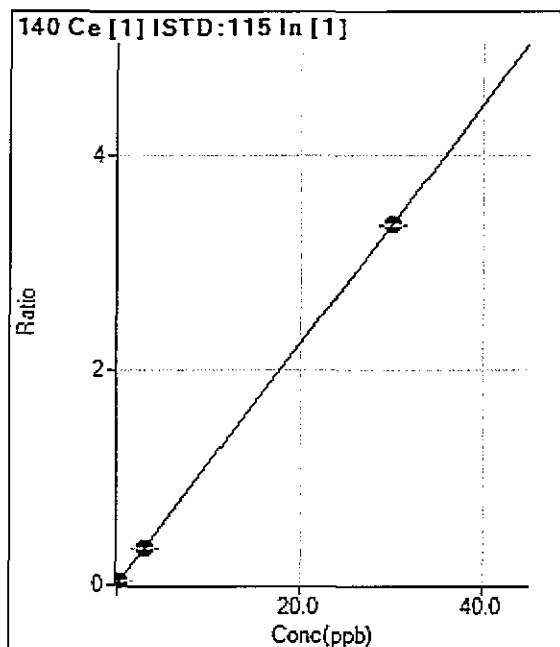
R = 1.0000

DL = 0.001839

BEC = 0.007784

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	<input type="checkbox"/>	0.000	0.000	1113.45	0.0017	P	19.2
2	<input type="checkbox"/>	0.030	0.034	3663.93	0.0056	P	5.6
3	<input type="checkbox"/>	0.300	0.314	25518.77	0.0369	P	1.0
4	<input type="checkbox"/>	3.000	2.978	240149.86	0.3350	P	0.8
5	<input type="checkbox"/>	30.000	30.002	2485014.65	3.3592	A	0.4
6	<input type="checkbox"/>	6.000					

$$y = 0.1119 * x + 0.0017$$

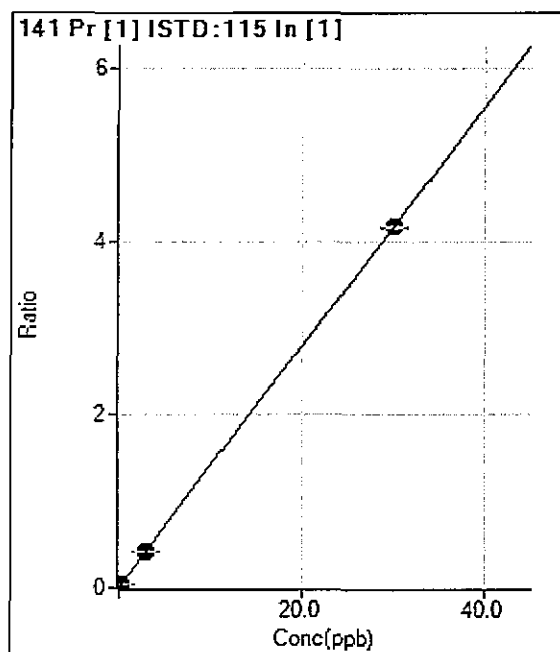
R = 1.0000

DL = 0.008965

BEC = 0.01555

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det	RSD
1	<input type="checkbox"/>	0.000	0.000	120.01	0.0002	P	22.1
2	<input type="checkbox"/>	0.030	0.031	2913.75	0.0044	P	7.4
3	<input type="checkbox"/>	0.300	0.301	29075.53	0.0421	P	2.2
4	<input type="checkbox"/>	3.000	3.023	301313.15	0.4203	P	0.1
5	<input type="checkbox"/>	30.000	29.998	3084665.68	4.1697	A	0.8
6	<input type="checkbox"/>	6.000					

$$y = 0.1390 * x + 1.8760E-004$$

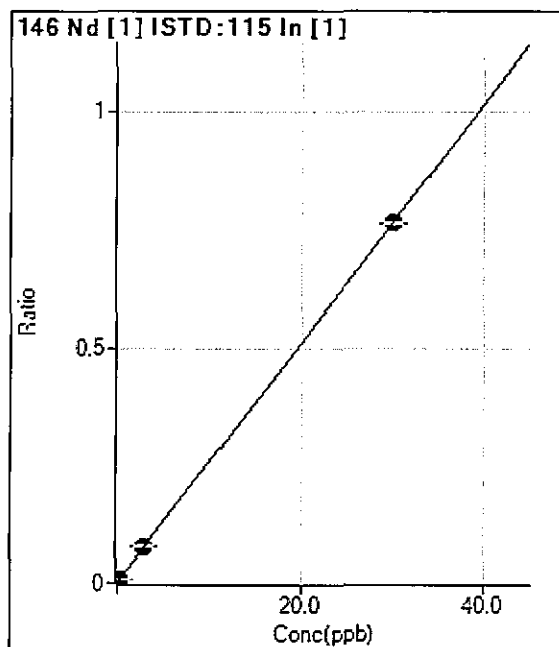
R = 1.0000

DL = 0.0008932

BEC = 0.00135

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	80.00	0.0001	P	46.4
2	<input type="checkbox"/>	0.030	0.033	630.05	0.0010	P	11.2
3	<input type="checkbox"/>	0.300	0.312	5587.96	0.0081	P	4.6
4	<input type="checkbox"/>	3.000	3.071	56174.10	0.0784	P	3.4
5	<input type="checkbox"/>	30.000	29.993	565400.98	0.7643	P	0.9
6	<input type="checkbox"/>	6.000					

$$y = 0.0255 * x + 1.2550E-004$$

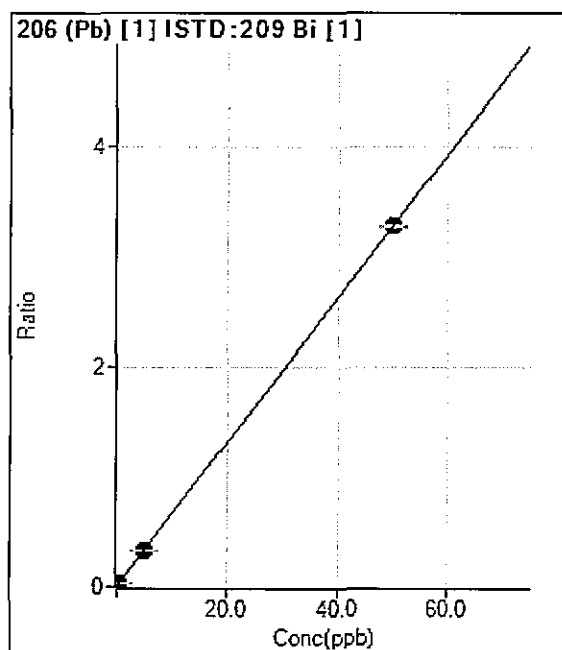
R = 1.0000

DL = 0.006863

BEC = 0.004926

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	936.74	0.0026	P	6.6
2	<input type="checkbox"/>	0.050	0.060	2443.66	0.0066	P	6.8
3	<input type="checkbox"/>	0.500	0.540	14944.92	0.0380	P	5.0
4	<input type="checkbox"/>	5.000	4.958	130851.51	0.3274	P	1.9
5	<input type="checkbox"/>	50.000	50.004	1298930.66	3.2787	P	0.2
6	<input type="checkbox"/>	10.000					

$$y = 0.0655 * x + 0.0026$$

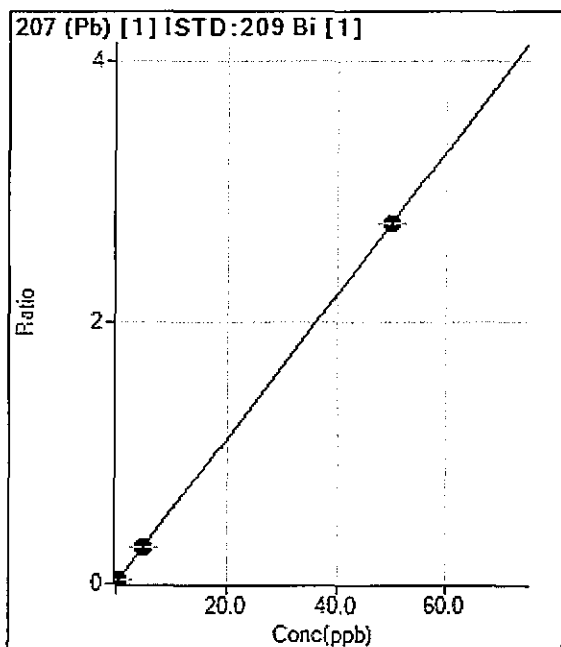
R = 1.0000

DL = 0.007907

BEC = 0.03969

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	816.73	0.0023	P	10.9
2	<input type="checkbox"/>	0.050	0.055	1963.56	0.0053	P	4.2
3	<input type="checkbox"/>	0.500	0.547	12739.40	0.0324	P	2.0
4	<input type="checkbox"/>	5.000	5.033	111689.19	0.2795	P	1.6
5	<input type="checkbox"/>	50.000	49.996	1091902.59	2.7562	P	0.1
6	<input type="checkbox"/>	10.000					

$$y = 0.0551 * x + 0.0023$$

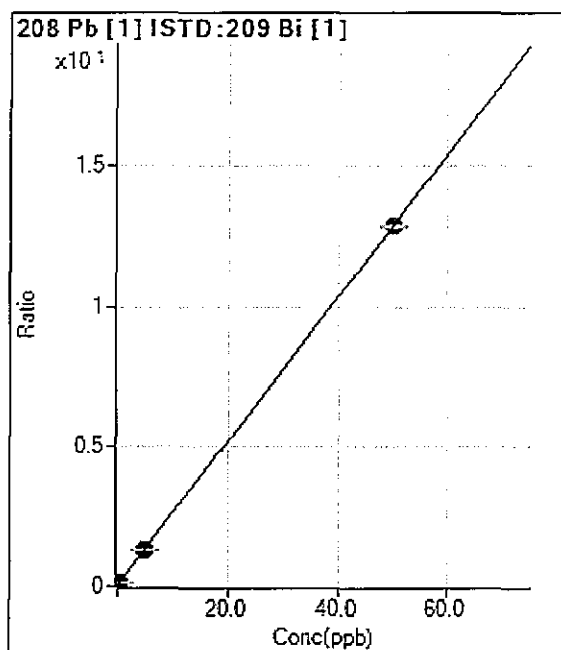
$$R = 1.0000$$

$$DL = 0.01344$$

$$BEC = 0.04116$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	4037.11	0.0112	P	6.8
2	<input type="checkbox"/>	0.050	0.056	9518.35	0.0255	P	4.4
3	<input type="checkbox"/>	0.500	0.530	58066.66	0.1477	P	1.1
4	<input type="checkbox"/>	5.000	5.013	520128.82	1.3015	P	1.5
5	<input type="checkbox"/>	50.000	49.998	5102760.28	12.8803	A	0.3
6	<input type="checkbox"/>	10.000					

$$y = 0.2574 * x + 0.0112$$

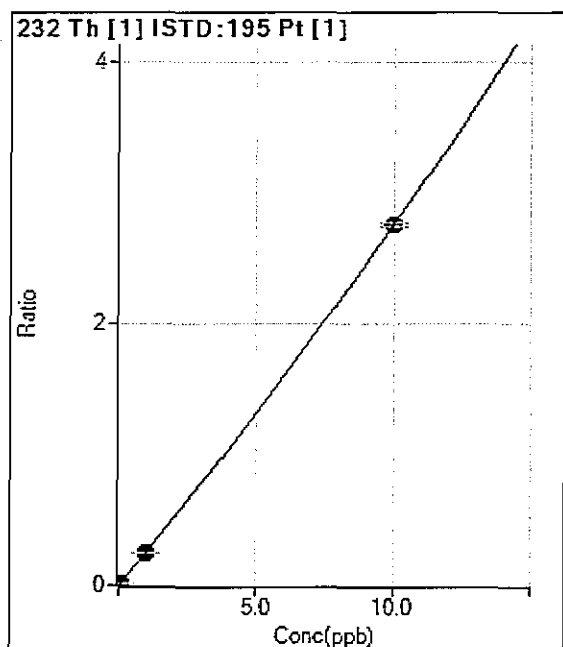
$$R = 1.0000$$

$$DL = 0.008873$$

$$BEC = 0.04354$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.010	184.45	0.0005	P	11.1
2	<input type="checkbox"/>	0.010	0.016	747.81	0.0018	P	15.8
3	<input type="checkbox"/>	0.100	0.082	7895.65	0.0184	P	3.9
4	<input type="checkbox"/>	1.000	1.002	110214.99	0.2520	P	1.5
5	<input type="checkbox"/>	10.000	10.000	1198250.44	2.7572	P	1.1
6	<input type="checkbox"/>	2.000					

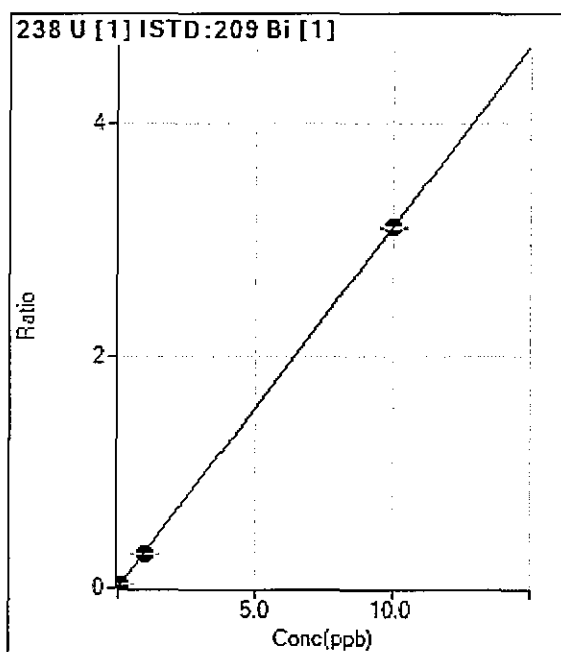
$$y = 0.0025 * x^2 + 0.2512 * x - 0.0022$$

$$DL = 0.000614$$

$$BEC = -0.008566$$

Weight: None

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	<input type="checkbox"/>	0.000	0.000	68.89	0.0002	P	14.0
2	<input type="checkbox"/>	0.010	0.010	1224.51	0.0033	P	5.6
3	<input type="checkbox"/>	0.100	0.097	11952.75	0.0304	P	1.3
4	<input type="checkbox"/>	1.000	0.973	120863.72	0.3024	P	1.3
5	<input type="checkbox"/>	10.000	10.003	1230684.16	3.1065	P	0.6
6	<input type="checkbox"/>	2.000					

$$y = 0.3105 * x + 1.9124E-004$$

$$R = 1.0000$$

$$DL = 0.0002578$$

$$BEC = 0.0006158$$

Weight: None

Min Conc: <None>

Header Information for Analytical Run: Hg130308-2

Analyst: Sheri Lafferty

Standards:

Stock A: 10ppm (ST121005-2)

Stock B: 10ppm (ST121005-4)

Daily standards made by diluting stock solution 100X

Reagents:

See digestion log

Pipettes Used:

M-57 --- 0.01mL to 0.1mL

M-61 --- 0.1mL to 1.0mL

M-1010---1.0mL to 5.0mL

Method of Dilution:

2X-----Dilution made by diluting 5.0ml of sample to 10ml final volume.

5X-----Dilution made by diluting 2.0ml of sample to 10ml final volume

10X-----Dilution made by diluting 1.0ml of sample to 10ml final volume

20X--- Dilution made by diluting 0.5ml of sample to 10ml final volume

50X--- Dilution made by diluting 0.2ml of sample to 10ml final volume

100X---Dilution made by diluting 0.1ml of sample to 10ml final volume

500X---Dilution made by diluting a 5X dilution 100X

1000X- Dilution made by diluting a 10X dilution 100X

Daily Maintenance:

1. Check/ Change peristaltic pump tubing
2. Check gas liquid separator for deposits, clean if necessary
3. Check/ Refill rinse water & stannous chloride reservoirs

Daily Maintenance done by: SL

Monthly Maintenance:

1. Check/ Clean sample and reference cells
2. Check/ Change Nafion cartridge

Monthly Maintenance done by: SL 03/05/2013

Report Generated By CETAC QuickTrace

Analyst: sheri.lafferty

Worksheet file: C:\Program Files\QuickTrace\Worksheets\HG130308-2.wsz

Date Started: 3/8/2013 2:11:30 PM

Comment:

Results

Sample Name				Type	Date/Time	Conc (ppb)	%RSD	Flags
Calibration Blank				STD	03/11/13 11:43:04 am	0.00000	2.69	
Replicates	70.8	68.3	70.3	72.9				
Standard #1 (0.20 ppb)				STD	03/11/13 11:45:12 am	0.20000	0.09	
Replicates	3569.2	3576.4	3576.2	3573.9				
Standard #2 (0.50 ppb)				STD	03/11/13 11:47:20 am	0.50000	0.18	
Replicates	7170.6	7184.7	7194.6	7199.5				
Standard #3 (1.0 ppb)				STD	03/11/13 11:49:29 am	1.00000	0.19	
Replicates	16784.9	16823.4	16844.8	16857.7				
Standard #4 (2.0 ppb)				STD	03/11/13 11:51:38 am	2.00000	0.16	
Replicates	36711.9	36780.4	36825.3	36844.5				
Standard #5 (5.0 ppb)				STD	03/11/13 11:53:48 am	5.00000	0.13	
Replicates	80494.7	80665.8	80724.6	80721.5				
Standard #6 (10.0 ppb)				STD	03/11/13 11:55:59 am	10.00000	0.15	
Replicates	170289.8	170625.3	170777.0	170857.1				

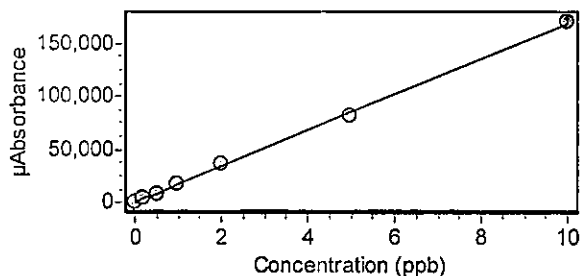
Calibration

Equation: $A = -148.801 + 16940.140C$

R2: 0.99879

SEE: 2363.6590

Flags: C



ICV				ICV	03/11/13 11:58:10 am	0.99800	0.23	
Replicates	16709.2	16749.8	16780.2	16798.8				
% Recovery	99.81							

Sample Name				Type	Date/Time	Conc (ppb)	%RSD	Flags
ICB				ICB	03/11/13 12:00:21 pm	0.01000	15.16	Z
Replicates	22.7	24.1	19.0	17.3				
CRA				UNK	03/11/13 12:10:35 pm	0.21700	0.16	
Replicates	3522.2	3529.3	3532.3	3535.4				
HG130308-2MB				UNK	03/11/13 12:12:42 pm	0.00994	16.92	
Replicates	16.1	17.4	21.7	23.0				
HG130308-2LCS				UNK	03/11/13 12:14:50 pm	1.09000	0.23	
Replicates	18343.3	18392.1	18421.1	18439.2				
1303098-1				UNK	03/11/13 12:16:57 pm	5.46000	0.16	
Replicates	92211.8	92369.1	92474.4	92562.8				
1303098-2				UNK	03/11/13 12:19:06 pm	2.54000	0.19	
Replicates	42798.4	42878.6	42936.6	42986.2				
1303098-3				UNK	03/11/13 12:21:14 pm	2.93000	0.21	
Replicates	49333.3	49445.6	49521.9	49566.3				
1303098-4				UNK	03/11/13 12:23:23 pm	2.44000	0.15	
Replicates	41114.1	41186.9	41229.7	41257.2				
1303098-5				UNK	03/11/13 12:25:32 pm	3.01000	0.16	
Replicates	50703.6	50799.3	50856.0	50894.3				
1303098-5D				UNK	03/11/13 12:27:41 pm	2.84000	0.21	
Replicates	47756.7	47872.9	47944.0	47987.1				
1303098-5L 5X				UNK	03/11/13 12:29:51 pm	0.63400	0.19	
Replicates	10570.9	10596.0	10610.0	10616.0				
CCV				UNK	03/11/13 12:32:00 pm	2.15000	0.21	
Replicates	36085.8	36184.2	36233.8	36253.0				

Sample Name				Type	Date/Time	Conc (ppb)	%RSD	Flags
CCB				UNK	03/11/13 12:34:11 pm	0.00988	9.69	
Replicates	19.4	17.1	17.2	20.8				
1303098-5MS				UNK	03/11/13 12:36:18 pm	5.06000	0.18	
Replicates	85318.6	85519.1	85624.7	85668.0				
1303098-5MSD				UNK	03/11/13 12:38:25 pm	4.60000	0.18	
Replicates	77520.3	77678.1	77777.1	77847.8				
1303059-1				UNK	03/11/13 12:40:32 pm	0.57100	0.17	
Replicates	9497.0	9513.6	9524.6	9534.7				
1303059-2				UNK	03/11/13 12:42:39 pm	0.06630	0.25	
Replicates	977.6	972.5	972.3	974.3				
1303059-3				UNK	03/11/13 12:44:47 pm	8.29000	0.19	
Replicates	139893.7	140167.0	140359.5	140493.7				
1303059-4				UNK	03/11/13 12:46:55 pm	6.39000	0.23	
Replicates	107707.3	107959.5	108142.1	108278.2				
1303059-5				UNK	03/11/13 12:49:03 pm	0.27600	0.20	
Replicates	4517.2	4525.1	4531.6	4538.7				
1303059-6				UNK	03/11/13 12:51:12 pm	0.52600	0.19	
Replicates	8743.5	8759.4	8774.4	8780.4				
1303059-7				UNK	03/11/13 12:53:21 pm	0.39400	0.25	
Replicates	6511.1	6524.6	6542.5	6546.8				
1303059-8				UNK	03/11/13 12:55:30 pm	0.51700	0.23	
Replicates	10270.9	10294.6	10313.9	10324.5				
CCV				UNK	03/11/13 12:57:40 pm	2.16000	0.32	
Replicates	36302.6	36416.0	36508.6	36568.5				

Sample Name				Type	Date/Time	Conc (ppb)	%RSD	Flags
CCB				UNK	03/11/13 12:59:50 pm	0.00977	7.69	
Replicates	18.5	16.9	15.9	15.7				
1303059-9				UNK	03/11/13 01:01:56 pm	0.17700	0.19	
Replicates	2849.2	2854.7	2857.9	2862.0				
1303059-10				UNK	03/11/13 01:04:03 pm	0.18400	0.16	
Replicates	2960.2	2965.1	2966.0	2972.0				
1303059-11				UNK	03/11/13 01:06:10 pm	0.36300	0.17	
Replicates	5987.5	6003.7	6007.9	6009.3				
1303059-12				UNK	03/11/13 01:08:18 pm	0.07010	0.32	
Replicates	1033.7	1037.1	1039.8	1041.4				
1303059-13				UNK	03/11/13 01:10:26 pm	0.13500	0.31	
Replicates	2137.5	2140.7	2148.3	2151.9				
1303059-14				UNK	03/11/13 01:12:34 pm	0.03620	0.10	
Replicates	465.0	464.7	465.0	464.0				
1303059-15				UNK	03/11/13 01:14:42 pm	0.03050	0.79	
Replicates	372.1	368.8	367.2	365.2				
CRA				UNK	03/11/13 01:16:51 pm	0.22000	0.21	
Replicates	3563.5	3569.1	3576.3	3580.0				
CCV				UNK	03/11/13 01:18:59 pm	2.16000	0.16	
Replicates	36336.7	36407.5	36446.9	36466.8				
CCB				UNK	03/11/13 01:21:09 pm	0.00967	5.13	
Replicates	16.2	14.5	14.6	14.9				



Miscellaneous

METALS DIGESTION WORKSHEET

ALS Laboratory Group

Digestion Date 3.7.17 HCl Lot No. C000018301 Method: 3050 Beaker Lot No. MFCGLKK61 Initial Prep BD Final Prep DM
 Digestion Batch IP130307-7 HNO₃ Lot No. 111120 SOP/Rev: 806R15 Avg. Beaker Wt. (g) 20.9 Prep Start Time 1400 Prep End Time 1800
 Temp 95 °C Peroxide Lot No. 218704 Balance(s): 30 Pipet(s): 14-70 Digestate Wt. (g) 105.11

Form 805r20.xls (02/10/11)

Note: Each Page is copied as completed and included with the workorder/run documentation; reviewed subsequently

QC Grp	Lab Sample ID	Instrument	Init Vol/Wt (mL/g)	Final Vol. (mL)	Final Wt. (g)	pH	Comments, including metals list
	1303059-1	TRIMS	Sec	100.0	126.0	N/A	MS: 4
	-1D		Line				-DC: 24 Targets
	-1ms						
	-1ms55						
	-2						
	-3						
	-4						
	-5						
	-6						
	-7						
	-8						
	-9						
	-10						
	-11						
	-12						
	-13						
	-14						
	-15						
	IP130307-3 MB						
	-7 LLS						
	IP130307-3 LLS						

QC Grp	Lab Sample ID	Init Vol/Wt (mL/g)	Final Vol. (mL)	Final Wt. (g)	Spiking Information
					QC Amount
					ST1401-7 2mL Z
					ST121231-1 1mL ms
					ST121231-2 2mL CL
					ST121231-3 1mL L

431949

MERCURY DIGESTION - SOIL

Method 7471 SOP 812/Rev 15 Date Analyzed 3-11-13 File HG130308-1** Init. dy (prep.) dy (analysis)
 Digestion Date 3-8-13 Spike Witness N/A Time Start 1300 Time Finish 1330 Bath Temp 95°C

Tube #	Solution ID	Spike * Solution	Spike Volume (mL)	Sample **** Aliquot (g)	Final ** Volume (mL)	Comments
STD 1	0 ppb	-	-	-	100.0	
2	0.2 ppb	A	0.2	-	100.0	
3	0.5 ppb	A	0.5	-	100.0	
4	1.0 ppb	A	1.0	-	100.0	
5	2.0 ppb	A	2.0	-	100.0	
6	5.0 ppb	A	5.0	-	100.0	
7	10.0 ppb	A	10.0	-	100.0	
	ICV	B	1.0	-	100.0	
	ICB	-	-	-	100.0	
	CRA-0.2 ppb	A	0.2	-	100.0	
SAMPLES - Prep. Batch ID(s) <u>HG130308-2</u> (see LIMS Prep. Batch report for sample info. (IDs, Aliquots, etc.))						
	CCVs	A	2.0	-	100.0	<u>3</u> # prepared
	CCBs	-	-	-	100.0	<u>3</u> # prepared

**** Automated balance entry into LIMS.

*** See run report for run log information.

** Laboratory DI water used to make-up to final volume.

*A: 100 ppb Hg solution made from 100x dilution (1 mL/100 mL) of ST121005-2HD

*B: 100 ppb Hg solution made from 100x dilution (1 mL/100 mL) of ST121005-4 ID (2nd source)

See run header for maintenance performed.

Digestion Cups: M421K506-3030-25

Reagents: HNO₃ 1111120 HCl 0000018301 SnCl₂ RG130301-1 KMnO₄ RG130301-4 Hydroxylamine RG130301-2

Balance(s) Used: 29

Pipet(s) Used: M57 M61 M1010

Note: Each page is copied as completed and included with the workorder/run documentation; reviewed subsequently

Percent Moisture

Method SOP642 Revision 9

Lab Name: ALS Environmental -- FC

Date Extracted: 03/07/2013	Balance ID: 31	Validated By: jac
Date Analyzed: 03/07/2013	Oven ID: 17	Validation Date: 03/07/2013
Analyst: James A. Ceimet	In Oven: 3/6/2013 16:10	Validation Time: 10:00:12 AM
	Out of Oven: 3/7/2013 8:40	

Run ID	Prep Batch ID	QC Batch ID	Lab ID	QC Type	Dish Wt	Wet Wt	Dry Wt	Dry Wt-Dish Wt	Percent Moisture	Percent Solids	RPD
EX130306-6A	EX130306-6	EX130306-6-1	1303059-1	SMP	1.325	10.20	11.29	9.97	2.3	97.7	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-2	SMP	1.333	10.13	11.29	9.95	1.7	98.3	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-3	DUP	1.335	10.27	11.32	9.98	2.8	97.2	2
EX130306-6A	EX130306-6	EX130306-6-1	1303059-3	SMP	1.342	10.27	11.32	9.98	2.9	97.1	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-4	SMP	1.347	10.33	11.46	10.12	2.0	98.0	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-5	SMP	1.338	10.22	11.42	10.08	1.4	98.6	
EX130306-6A	EX130306-6	EX130306-6-1	EX130306-6	MB	1.342	1.342	1.342	0.00	100.0	0.0	
EX130306-6A	EX130306-6	EX130306-6-2	EX130306-6	MB	1.342	1.342	1.342	0.00	100.0	0.0	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-6	SMP	1.334	10.25	11.41	10.07	1.8	98.2	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-7	SMP	1.326	10.22	11.44	10.12	1.0	99.0	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-8	SMP	1.326	10.20	11.37	10.04	1.6	98.4	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-9	SMP	1.331	10.22	11.41	10.08	1.4	98.6	
EX130306-6A	EX130306-6	EX130306-6-1	1303059-10	SMP	1.333	10.21	11.42	10.09	1.1	98.9	
EX130306-6A	EX130306-6	EX130306-6-2	1303059-11	SMP	1.332	10.24	11.52	10.19	0.6	99.4	
EX130306-6A	EX130306-6	EX130306-6-2	1303059-12	SMP	1.343	10.21	11.42	10.07	1.3	98.7	
EX130306-6A	EX130306-6	EX130306-6-2	1303059-13	SMP	1.327	10.25	11.41	10.08	1.6	98.4	
EX130306-6A	EX130306-6	EX130306-6-2	1303059-14	DUP	1.328	10.23	11.49	10.16	0.7	99.3	18
EX130306-6A	EX130306-6	EX130306-6-2	1303059-14	SMP	1.336	10.25	11.52	10.19	0.6	99.4	
EX130306-6A	EX130306-6	EX130306-6-2	1303059-15	SMP	1.336	10.23	11.50	10.16	0.6	99.4	

QC Types

CAR	Carrier reference sample
LCS	Laboratory Control Sample
MB	Method Blank
MSD	Laboratory Matrix Spike Duplicate
RVS	Reporting Level Verification Standard
SYS	Sample Yield Spike

DUP	Laboratory Duplicate
LCSD	Laboratory Control Sample Duplicate
MS	Laboratory Matrix Spike
REP	Sample replicate
SMP	Field Sample

Comments:

DUP = Sample Duplicate
Wet Wt = Sample Wet Wt - Dish Wt
Dry Wt = Sample Dry Wt + Dish Wt
Dry Wt - Dish Wt = Sample Dry Wt - Dish Wt
All weight values shown above are expressed in grams.

$$RPD = \frac{|\text{Sample Value} - \text{Duplicate Value}|}{(\text{Sample Value} + \text{Duplicate Value})/2} \times 100$$

$$\% \text{ Solids} = \frac{\text{Dry Weight}}{\text{Wet Weight}} \times 100$$

$$\% \text{ Moisture} = \frac{(\text{Wet Weight} - \text{Dry Weight})}{\text{Wet Weight}} \times 100$$

APPENDIX E

LABORATORY DATA VALIDATION PACKAGES

Review of Eberline Analytical Data Package 13-03013

The subject data package was reviewed and the data appear valid.

The data package contained analytical results for 16 soil samples including one lab duplicate. The lab blanks and spikes for the data package were within tolerances, and MDA's for all results were acceptable. The data package indicated a minimum 21 day holding time to allow for the ingrowth of radon daughters, and analytical results were reported for daughters of U-238 (Ra-226), Th-232, and K-40.

The data package contained 4 background and 11 site samples from the Marquez Mine. The Ra-226 concentrations in the site samples were all elevated, ranging from 13.8 to 2520 pCi/g, Th-232 ranged from 0.4 to 4.7 pCi/g, and K-40 ranged from 14 to 24 pCi/g. Ra-226 concentrations in the background samples ranged from 0.3 to 1.7 pCi/g. Th-232 ranged from 0.5 to 1.3 pCi/g, and K-40 ranged from 9 to 25 pCi/g.

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-35-130303
 1303059-1

Sample Matrix: SOIL
 % Moisture: 2.3
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.029 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2800	20		
7440-36-0	ANTIMONY	1	2	2	U	N
7440-38-2	ARSENIC	1	92	0.99		
7440-39-3	BARIUM	1	43	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	11000	99		N
7440-47-3	CHROMIUM	1	1.2	0.99		
7440-48-4	COBALT	1	1.7	0.99		
7440-50-8	COPPER	1	2.7	0.99		
7439-89-6	IRON	1	9100	9.9		
7439-92-1	LEAD	1	9.5	0.3		
7439-95-4	MAGNESIUM	1	900	99		
7439-96-5	MANGANESE	1	87	0.99		N
7439-98-7	MOLYBDENUM	1	130	0.99		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	1000	99		N
7782-49-2	SELENIUM	1	42	0.5		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	1	0.99		
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	120	0.99		N
7440-66-6	ZINC	1	11	2		

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Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-49-130303
 1303059-2

Sample Matrix: SOIL
 % Moisture: 1.7
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.001 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	2.3	1		
7440-39-3	BARIUM	1	34	10		
7440-41-7	BERYLLIUM	1	0.51	0.51	U	
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	2000	100		
7440-47-3	CHROMIUM	1	1.3	1		
7440-48-4	COBALT	1	1.1	1		
7440-50-8	COPPER	1	1.3	1		
7439-89-6	IRON	1	3300	10		
7439-92-1	LEAD	1	2.8	0.3		
7439-95-4	MAGNESIUM	1	620	100		
7439-96-5	MANGANESE	1	65	1		
7439-98-7	MOLYBDENUM	1	2.1	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	430	100		
7782-49-2	SELENIUM	1	2.6	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	12	1		
7440-66-6	ZINC	1	7.9	2		

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Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-51-130303

1303059-3

Sample Matrix: SOIL

% Moisture: 2.9

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.005 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2800	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	120	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	2.9	0.51		
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	5100	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	2.1	1		
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	7000	10		
7439-92-1	LEAD	1	82	0.31		
7439-95-4	MAGNESIUM	1	670	100		
7439-96-5	MANGANESE	1	77	1		
7439-98-7	MOLYBDENUM	1	850	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	800	100		
7782-49-2	SELENIUM	1	62	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	440	1		
7440-66-6	ZINC	1	9.3	2		

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Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-51-2-130303
 1303059-4

Sample Matrix: SOIL
 % Moisture: 2.0
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.012 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	100	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	2.3	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	5600	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1.8	1		
7440-50-8	COPPER	1	1.1	1		
7439-89-6	IRON	1	7400	10		
7439-92-1	LEAD	1	61	0.3		
7439-95-4	MAGNESIUM	1	700	100		
7439-96-5	MANGANESE	1	85	1		
7439-98-7	MOLYBDENUM	1	750	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	760	100		
7782-49-2	SELENIUM	1	55	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	350	1		
7440-66-6	ZINC	1	9.9	2		

Data Package ID: #1303059-1

Date Printed: Tuesday, March 12, 2013

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-52-130303
 1303059-5

Sample Matrix: SOIL
 % Moisture: 1.4
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.011 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1700	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	6.4	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	6300	100		
7440-47-3	CHROMIUM	1	1.2	1		
7440-48-4	COBALT	1	1.2	1		
7440-50-8	COPPER	1	1.9	1		
7439-89-6	IRON	1	3300	10		
7439-92-1	LEAD	1	5.9	0.3		
7439-95-4	MAGNESIUM	1	620	100		
7439-96-5	MANGANESE	1	81	1		
7439-98-7	MOLYBDENUM	1	5	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	400	100		
7782-49-2	SELENIUM	1	22	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	72	1		
7440-66-6	ZINC	1	8.6	2		

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Data Package ID: it1303059-1

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-61-130303
 1303059-6

Sample Matrix: SOIL
 % Moisture: 1.8
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.015 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2500	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	21	1		
7440-39-3	BARIUM	1	23	10		
7440-41-7	BERYLLIUM	1	0.63	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	6000	100		
7440-47-3	CHROMIUM	1	1.2	1		
7440-48-4	COBALT	1	3	1		
7440-50-8	COPPER	1	4.5	1		
7439-89-6	IRON	1	5700	10		
7439-92-1	LEAD	1	9.2	0.3		
7439-95-4	MAGNESIUM	1	980	100		
7439-96-5	MANGANESE	1	140	1		
7439-98-7	MOLYBDENUM	1	220	1		
7440-02-0	NICKEL	1	2.5	2		
7440-09-7	POTASSIUM	1	490	100		
7782-49-2	SELENIUM	1	46	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	100	1		
7440-66-6	ZINC	1	13	2		

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Data Package ID: it1303059-1

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-62-130303
 1303059-7

Sample Matrix: SOIL
 % Moisture: 1.0
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.007 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2400	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	10	1		
7440-39-3	BARIUM	1	38	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4900	100		
7440-47-3	CHROMIUM	1	1.4	1		
7440-48-4	COBALT	1	1.7	1		
7440-50-8	COPPER	1	2.5	1		
7439-89-6	IRON	1	4800	10		
7439-92-1	LEAD	1	10	0.3		
7439-95-4	MAGNESIUM	1	1100	100		
7439-96-5	MANGANESE	1	120	1		
7439-98-7	MOLYBDENUM	1	19	1		
7440-02-0	NICKEL	1	2.1	2		
7440-09-7	POTASSIUM	1	820	100		
7782-49-2	SELENIUM	1	32	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	73	1		
7440-66-6	ZINC	1	12	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-63-130303
 1303059-8

Sample Matrix: SOIL
 % Moisture: 1.6
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.005 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2100	20		
7440-36-0	ANTIMONY	1	2	2	J	
7440-38-2	ARSENIC	1	19	1		
7440-39-3	BARIUM	1	32	10		
7440-41-7	BERYLLIUM	1	2	0.51		
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	2800	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1.9	1		
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	4500	10		
7439-92-1	LEAD	1	18	0.3		
7439-95-4	MAGNESIUM	1	690	100		
7439-96-5	MANGANESE	1	84	1		
7439-98-7	MOLYBDENUM	1	47	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	570	100		
7782-49-2	SELENIUM	1	36	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	160	1		
7440-66-6	ZINC	1	12	2		

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Data Package ID: it1303059-1

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-64-130303
 1303059-9

Sample Matrix: SOIL
 % Moisture: 1.4
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.017 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1600	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	5.7	1		
7440-39-3	BARIUM	1	32	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4100	100		
7440-47-3	CHROMIUM	1	1.1	1		
7440-48-4	COBALT	1	1.1	1		
7440-50-8	COPPER	1	1.5	1		
7439-89-6	IRON	1	3400	10		
7439-92-1	LEAD	1	4.6	0.3		
7439-95-4	MAGNESIUM	1	660	100		
7439-96-5	MANGANESE	1	76	1		
7439-98-7	MOLYBDENUM	1	7.4	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	510	100		
7782-49-2	SELENIUM	1	10	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	51	1		
7440-66-6	ZINC	1	8.8	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-65-130303

1303059-10

Sample Matrix: SOIL

% Moisture: 1.1

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.026 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1800	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	6.2	0.99		
7440-39-3	BARIUM	1	34	9.9		
7440-41-7	BERYLLIUM	1	0.49	0.49	U	
7440-43-9	CADMIUM	1	0.49	0.49	U	
7440-70-2	CALCIUM	1	5700	99		
7440-47-3	CHROMIUM	1	1.4	0.99		
7440-48-4	COBALT	1	1.7	0.99		
7440-50-8	COPPER	1	2.7	0.99		
7439-89-6	IRON	1	3900	9.9		
7439-92-1	LEAD	1	4.9	0.3		
7439-95-4	MAGNESIUM	1	1000	99		
7439-96-5	MANGANESE	1	91	0.99		
7439-98-7	MOLYBDENUM	1	6.4	0.99		
7440-02-0	NICKEL	1	3.2	2		
7440-09-7	POTASSIUM	1	560	99		
7782-49-2	SELENIUM	1	13	0.49		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	0.99	0.99	U	
7440-31-5	TIN	1	4.9	4.9	U	
7440-62-2	VANADIUM	1	44	0.99		
7440-66-6	ZINC	1	9.1	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-66-130303
 1303059-11

Sample Matrix: SOIL
 % Moisture: 0.6
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.015 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1500	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	8.2	0.99		
7440-39-3	BARIUM	1	27	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4600	99		
7440-47-3	CHROMIUM	1	0.99	0.99	U	
7440-48-4	COBALT	1	1.2	0.99		
7440-50-8	COPPER	1	1.8	0.99		
7439-89-6	IRON	1	3600	9.9		
7439-92-1	LEAD	1	6.7	0.3		
7439-95-4	MAGNESIUM	1	670	99		
7439-96-5	MANGANESE	1	79	0.99		
7439-98-7	MOLYBDENUM	1	9.1	0.99		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	390	99		
7782-49-2	SELENIUM	1	24	0.5		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	70	0.99		
7440-66-6	ZINC	1	9.1	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-BKGD-E-130303
 1303059-12

Sample Matrix: SOIL
 % Moisture: 1.3
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.017 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2700	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	1.8	1		
7440-39-3	BARIUM	1	45	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	1100	100		
7440-47-3	CHROMIUM	1	2.3	1		
7440-48-4	COBALT	1	1.7	1		
7440-50-8	COPPER	1	3.1	1		
7439-89-6	IRON	1	4500	10		
7439-92-1	LEAD	1	4.5	0.3		
7439-95-4	MAGNESIUM	1	770	100		
7439-96-5	MANGANESE	1	110	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	2.8	2		
7440-09-7	POTASSIUM	1	640	100		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	6.4	1		
7440-66-6	ZINC	1	12	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-BKGD-N-130303
 1303059-13

Sample Matrix: SOIL
 % Moisture: 1.6
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.017 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	6000	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	5.3	1		
7440-39-3	BARIUM	1	84	10		
7440-41-7	BERYLLIUM	1	0.6	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	18000	100		
7440-47-3	CHROMIUM	1	5.8	1		
7440-48-4	COBALT	1	4.5	1		
7440-50-8	COPPER	1	7.7	1		
7439-89-6	IRON	1	15000	10		
7439-92-1	LEAD	1	10	0.3		
7439-95-4	MAGNESIUM	1	6100	100		
7439-96-5	MANGANESE	1	190	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	8.1	2		
7440-09-7	POTASSIUM	1	1900	100		
7782-49-2	SELENIUM	1	0.97	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	14	1		
7440-66-6	ZINC	1	37	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-BKGD-S-130303

1303059-14

Sample Matrix: SOIL

% Moisture: 0.6

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.004 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	830	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	1	1	U	
7440-39-3	BARIUM	1	24	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	260	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1	1	U	
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	2100	10		
7439-92-1	LEAD	1	1.4	0.3		
7439-95-4	MAGNESIUM	1	220	100		
7439-96-5	MANGANESE	1	36	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	110	100		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	2.8	1		
7440-66-6	ZINC	1	4	2		

Data Package ID: it1303059-1

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-BKGD-W-130303

1303059-15

Sample Matrix: SOIL

% Moisture: 0.6

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.015 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	810	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	0.99	0.99	U	
7440-39-3	BARIUM	1	16	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	200	99		
7440-47-3	CHROMIUM	1	0.99	0.99	U	
7440-48-4	COBALT	1	0.99	0.99	U	
7440-50-8	COPPER	1	0.99	0.99	U	
7439-89-6	IRON	1	1800	9.9		
7439-92-1	LEAD	1	1.2	0.3		
7439-95-4	MAGNESIUM	1	180	99		
7439-96-5	MANGANESE	1	49	0.99		
7439-98-7	MOLYBDENUM	1	0.99	0.99	U	
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	160	99		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	0.99	0.99	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	2.5	0.99		
7440-66-6	ZINC	1	4	2		

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Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

ALS Environmental -- FC

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ds 3/16/13

Total URANIUM

Method SW6020 Revision A

Sample Results

Lab Name: ALS Environmental – FC
Client Name: Weston Solutions, Inc.
Client Project ID: Marquez Mine DRS
Work Order Number: 1303059
Reporting Basis: Dry Weight
Prep Method: SW3050B
Analyst: Ross Miller

Final Volume: 100 ml
Matrix: SOIL
Result Units: UG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
MQZ-35-130303	1303059-1	03/03/2013	03/07/2013	03/08/2013	2.3	100	130000	99		1.029 g
MQZ-49-130303	1303059-2	03/03/2013	03/07/2013	03/08/2013	1.7	100	11000	100		1.001 g
MQZ-51-130303	1303059-3	03/03/2013	03/07/2013	03/08/2013	2.9	100	4000000	100		1.005 g
MQZ-51-2-130303	1303059-4	03/03/2013	03/07/2013	03/08/2013	2.0	100	3200000	100		1.012 g
MQZ-52-130303	1303059-5	03/03/2013	03/07/2013	03/08/2013	1.4	100	55000	100		1.011 g
MQZ-61-130303	1303059-6	03/03/2013	03/07/2013	03/08/2013	1.8	100	270000	100		1.015 g
MQZ-62-130303	1303059-7	03/03/2013	03/07/2013	03/08/2013	1.0	100	83000	100		1.007 g
MQZ-63-130303	1303059-8	03/03/2013	03/07/2013	03/08/2013	1.6	100	3800000	100		1.005 g
MQZ-64-130303	1303059-9	03/03/2013	03/07/2013	03/08/2013	1.4	100	53000	100		1.017 g
MQZ-65-130303	1303059-10	03/03/2013	03/07/2013	03/08/2013	1.1	100	35000	99		1.026 g
MQZ-66-130303	1303059-11	03/03/2013	03/07/2013	03/08/2013	0.6	100	37000	99		1.015 g
MQZ-BKGD-E-130303	1303059-12	03/03/2013	03/07/2013	03/08/2013	1.3	100	660	100		1.017 g
MQZ-BKGD-N-130303	1303059-13	03/03/2013	03/07/2013	03/08/2013	1.6	100	820	100		1.017 g
MQZ-BKGD-S-130303	1303059-14	03/03/2013	03/07/2013	03/08/2013	0.6	100	140	100		1.004 g
MQZ-BKGD-W-130303	1303059-15	03/03/2013	03/07/2013	03/08/2013	0.6	100	170	99		1.015 g

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *im1303059-1*

Date Printed: Tuesday, March 12, 2013

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Total MERCURY

Method SW7471 Revision A

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: Weston Solutions, Inc.
Client Project ID: Marquez Mine DRS
Work Order Number: 1303059
Reporting Basis: Dry Weight
Prep Method: METHOD
Analyst: Sheri Lafferty

Final Volume: 100 g
Matrix: SOIL
Result Units: MG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
MQZ-35-130303	1303059-1	03/03/2013	03/08/2013	03/11/2013	2.3	1	0.096	0.034		0.609 g
MQZ-49-130303	1303059-2	03/03/2013	03/08/2013	03/11/2013	1.7	1	0.033	0.033	U	0.609 g
MQZ-51-130303	1303059-3	03/03/2013	03/08/2013	03/11/2013	2.9	1	0.94	0.023		0.905 g
MQZ-51-2-130303	1303059-4	03/03/2013	03/08/2013	03/11/2013	2.0	1	1.1	0.033		0.613 g
MQZ-52-130303	1303059-5	03/03/2013	03/08/2013	03/11/2013	1.4	1	0.046	0.034		0.603 g
MQZ-61-130303	1303059-6	03/03/2013	03/08/2013	03/11/2013	1.8	1	0.089	0.034		0.601 g
MQZ-62-130303	1303059-7	03/03/2013	03/08/2013	03/11/2013	1.0	1	0.066	0.033		0.607 g
MQZ-63-130303	1303059-8	03/03/2013	03/08/2013	03/11/2013	1.6	1	0.1	0.033		0.616 g
MQZ-64-130303	1303059-9	03/03/2013	03/08/2013	03/11/2013	1.4	1	0.033	0.033	U	0.61 g
MQZ-65-130303	1303059-10	03/03/2013	03/08/2013	03/11/2013	1.1	1	0.033	0.033	U	0.611 g
MQZ-66-130303	1303059-11	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.059	0.033		0.617 g
MQZ-BKGD-E-130303	1303059-12	03/03/2013	03/08/2013	03/11/2013	1.3	1	0.033	0.033	U	0.609 g
MQZ-BKGD-N-130303	1303059-13	03/03/2013	03/08/2013	03/11/2013	1.6	1	0.034	0.034	U	0.6 g
MQZ-BKGD-S-130303	1303059-14	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.033	0.033	U	0.608 g
MQZ-BKGD-W-130303	1303059-15	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.033	0.033	U	0.601 g

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: hg1303059-1

Date Printed: Tuesday, March 12, 2013

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DATA QUALITY ASSURANCE REVIEW

SITE NAME Marquez Mine

WORK ORDER NUMBER 20406.012.035.0783.01 TDD NUMBER TO-0035-12-11-02

PROJECT NUMBER _____ SDG NUMBER 1303059

Weston Solutions, Inc. (WESTON®) has completed a QA review for Work Order Number 20406.012.035.0783.01; SDG No. 1303059; Marquez Mine. Fifteen samples were analyzed for metals by ALS Environmental. Sample numbers are listed below.

SAMPLE NUMBERS

<u>MQZ-35-130303</u>	<u>MQZ-49-130303</u>	<u>MQZ-51-130303</u>
<u>MQZ-51-2-130303</u>	<u>MQZ-52-130303</u>	<u>MQZ-61-130303</u>
<u>MQZ-62-130303</u>	<u>MQZ-63-130303</u>	<u>MQZ-64-130303</u>
<u>MQZ-65-130303</u>	<u>MQZ-66-130303</u>	<u>MQZ-BKGD-E-130303</u>
<u>MQZ-BKGD-N-130303</u>	<u>MQZ-BKGD-S-130303</u>	<u>MQZ-BKGD-W-130303</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

This data package was validated to determine if Quality Control (QC) specifications were achieved, following *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (June, 2008), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (Jan, 2010), *USEPA Contract Laboratory Program National Functional Guidelines for Chlorinated Dioxin/Furan Data Review* (Sep, 2011), *Quality Assurance/Quality Control Guidance for Removal Activities* (April, 1990), and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989). Specific data qualifications are listed in the following discussion.

REVIEWER Gloria J. Switalski DATE March 26, 2013

Data Qualifiers

Data Qualifier Definitions were supplied by the Office of Solid Waste and Emergency Response (September 1989) and are included in the Functional Guidelines. Data qualifiers may be combined (UJ, QJ) with the corresponding combination of meanings. Additional qualifier may be added to provide additional, more specific information (JL, UB, QJK), modifying the meaning of the primary qualifier. Addition qualifiers utilized by WESTON are H, L, K, B, Q, and D.

- U - The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation or detection limit, which has been adjusted for sample weight/sample volume, extraction volume, percent solids, sample dilution or other analysis specific parameters.

An additional qualifier, "B", may be appended to indicate that while the analyte was detected in the sample, the presence of the analyte may be attributable to blank contamination and the analyte is therefore considered undetected with the sample detection or quantitation limit for the analyte being elevated.

- J - The analyte was analyzed for, but the associated numerical value may not be consistent with the amount actually present in the environmental sample or may not be consistent with the sample detection or quantitation limit. The value is an estimated quantity. The data should be seriously considered for decision-making and are usable for many purposes.

An additional qualifier will be appended to the "J" qualifier that indicates the bias in the reported results:

L Low bias

H High bias

K Unknown bias

Q The reported concentration is less than the sample quantitation limit for the specific analyte in the sample.

The L and H qualifier will only be employed when a single qualification is required. When more than one quality control parameter affects the analytical result and a conflict results in assigning a bias, the result will be flagged JK.

- R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.
- N - The analysis indicates the presence of analyte for which there is presumptive evidence to make a "tentative identification."
- D - The concentration reported was determined in the re-analysis of the sample at a secondary dilution.

METALS DATA EVALUATION

1. Analytical Method:

Samples were prepared and analyzed for ICP metals using the procedures specified in **SW-846 Methods 6010B and 6020A**. Samples were prepared and analyzed for mercury using the procedures specified in **SW-846 Method 7471A**.

2. Holding Times:

All samples met established holding time criteria of 180 days for ICP metals and 28 days for mercury. Samples were maintained at $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. No qualifications are placed on the data.

3. Initial Calibration:

ICP initial calibration included a blank and one or more standards and initial calibration verification results fell within the control limits of 90 to 110 percent of the true values. Mercury initial calibration included a blank and six standards and the correlation coefficient was greater than 0.995. No qualifications are placed on the data.

4. Continuing Calibration:

All ICP results fell within the control limits of 90% to 110% of the true values. All mercury results fell within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

5. CRQL Standard:

The CRQL standards met acceptance criteria. No qualifications are placed on the data.

6. Blanks:

A. Laboratory Blanks:

No target analytes were detected in the calibration and preparation blanks. No qualifications are placed on the data.

B. Field Blanks:

No field blank samples were submitted with this analytical package. No qualifications are placed on the data.

7. ICP Interference Check:

All results for the Interference Check Sample were within the control limits of 80% to 120% of the true values. No qualifications are placed on the data.

8. Laboratory Control Sample (LCS):

The recoveries for the LCS were within the control limits provided. No qualifications are placed on the data.

9. Duplicate Sample Analysis:

A. Laboratory Duplicate Analysis:

Sample MQZ-35-130303 underwent laboratory duplicate analysis for the solid matrix for ICP metals. QC criteria are that the Relative Percent Difference (RPD) values for the duplicate sample analysis be less than 20% for aqueous samples and less than 35% for solid samples for concentrations greater than five times the reporting limit (RL). For sample concentrations less than five times the RL, the QC criteria are within \pm the RL for the aqueous matrix or \pm two times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

B. Field Duplicate Analysis:

The following sample pair was submitted as field duplicates for the solid matrix: MQZ-51-130303/MQZ-51-2-130303. QC criteria are that the RPD values for the field duplicate sample analysis be less than 30% for aqueous samples and less than 50% for solid samples for concentrations greater than five times the RL. For sample concentrations less than five times the RL, the QC criteria is that the absolute difference between the samples is less than two times the RL for aqueous samples or less than 3.5 times the RL for the solid matrix. All QC criteria were met. No qualifications are placed on the data.

10. Spiked Sample Analysis:

Sample MQZ-20-130303 underwent spike and spike duplicate analysis for the solid matrix for ICP metals. The spike recoveries for the following analytes were outside of the 75%-125% QC recovery limits for analytes whose sample concentration did not exceed the spike concentration by a factor of 4 times or more:

ANALYTE	MATRIX	% RECOVERY	AFFECTED SAMPLES	QUALIFIER FLAG
Antimony Calcium Manganese Vanadium	Solid	62/60 140/437 OK/132 136/127	All	UJL JK* JH JH

*MS/MSD RPD criteria (51%) exceeded acceptance criteria ($\leq 35\%$).

11. ICP Serial Dilution:

Sample MQZ-35-130303 underwent serial dilution for ICP metals. The Percent Difference (%D) values for the serial dilution analyses were within the QC limits of 10% for all analytes with concentrations greater than 50 times their method detection limit (MDL) with the following exception:

ANALYTE	MATRIX	%D	AFFECTED SAMPLES	QUALIFIER FLAG
Potassium	Solid	21	All	JK

12. Sample Quantitation and Reporting Limits:

Concentrations of all reported analytes were correctly calculated.

Some analytes in some samples were analyzed at a dilution due to the high concentration present in the samples and/or due to sample matrix. The RL in these samples are elevated as a result of the dilution performed.

13. Laboratory Contact

No laboratory contact was required

14. Overall Assessment:

The antimony results in all samples are estimated due to low MS/MSD recoveries.

The manganese and vanadium results in all samples are estimated due to high MS and/or MSD recoveries.

The calcium results in all samples are estimated due to high MS/MSD recoveries and RPD.

The potassium results in all samples are estimated due to high serial dilution %D.

The analytical data is acceptable for use with the qualifications listed above.

Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-35-130303
 1303059-1

Sample Matrix: SOIL
 % Moisture: 2.3
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.029 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2800	20		
7440-36-0	ANTIMONY	1	2	2	U	N
7440-38-2	ARSENIC	1	92	0.99		
7440-39-3	BARIUM	1	43	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	11000	99		N
7440-47-3	CHROMIUM	1	1.2	0.99		
7440-48-4	COBALT	1	1.7	0.99		
7440-50-8	COPPER	1	2.7	0.99		
7439-89-6	IRON	1	9100	9.9		
7439-92-1	LEAD	1	9.5	0.3		
7439-95-4	MAGNESIUM	1	900	99		
7439-96-5	MANGANESE	1	87	0.99		N
7439-98-7	MOLYBDENUM	1	130	0.99		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	1000	99		N
7782-49-2	SELENIUM	1	42	0.5		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	1	0.99		
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	120	0.99		N
7440-66-6	ZINC	1	11	2		

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Data Package ID: it1303059-1

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-49-130303
 1303059-2

Sample Matrix: SOIL
 % Moisture: 1.7
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.001 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	2.3	1		
7440-39-3	BARIUM	1	34	10		
7440-41-7	BERYLLIUM	1	0.51	0.51	U	
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	2000	100		
7440-47-3	CHROMIUM	1	1.3	1		
7440-48-4	COBALT	1	1.1	1		
7440-50-8	COPPER	1	1.3	1		
7439-89-6	IRON	1	3300	10		
7439-92-1	LEAD	1	2.8	0.3		
7439-95-4	MAGNESIUM	1	620	100		
7439-96-5	MANGANESE	1	65	1		
7439-98-7	MOLYBDENUM	1	2.1	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	430	100		
7782-49-2	SELENIUM	1	2.6	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	12	1		
7440-66-6	ZINC	1	7.9	2		

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Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-51-130303

1303059-3

Sample Matrix: SOIL

% Moisture: 2.9

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.005 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2800	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	120	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	2.9	0.51		
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	5100	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	2.1	1		
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	7000	10		
7439-92-1	LEAD	1	82	0.31		
7439-95-4	MAGNESIUM	1	670	100		
7439-96-5	MANGANESE	1	77	1		
7439-98-7	MOLYBDENUM	1	850	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	800	100		
7782-49-2	SELENIUM	1	62	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	440	1		
7440-66-6	ZINC	1	9.3	2		

Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-51-2-130303
1303059-4

Sample Matrix: SOIL

% Moisture: 2.0

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.012 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2700	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	100	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	2.3	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	5600	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1.8	1		
7440-50-8	COPPER	1	1.1	1		
7439-89-6	IRON	1	7400	10		
7439-92-1	LEAD	1	61	0.3		
7439-95-4	MAGNESIUM	1	700	100		
7439-96-5	MANGANESE	1	85	1		
7439-98-7	MOLYBDENUM	1	750	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	760	100		
7782-49-2	SELENIUM	1	55	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	350	1		
7440-66-6	ZINC	1	9.9	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-52-130303
 1303059-5

Sample Matrix: SOIL
 % Moisture: 1.4
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.011 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1700	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	6.4	1		
7440-39-3	BARIUM	1	36	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	6300	100		
7440-47-3	CHROMIUM	1	1.2	1		
7440-48-4	COBALT	1	1.2	1		
7440-50-8	COPPER	1	1.9	1		
7439-89-6	IRON	1	3300	10		
7439-92-1	LEAD	1	5.9	0.3		
7439-95-4	MAGNESIUM	1	620	100		
7439-96-5	MANGANESE	1	81	1		
7439-98-7	MOLYBDENUM	1	5	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	400	100		
7782-49-2	SELENIUM	1	22	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	72	1		
7440-66-6	ZINC	1	8.6	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-61-130303
 1303059-6

Sample Matrix: SOIL
 % Moisture: 1.8
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.015 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2500	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	21	1		
7440-39-3	BARIUM	1	23	10		
7440-41-7	BERYLLIUM	1	0.63	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	6000	100		
7440-47-3	CHROMIUM	1	1.2	1		
7440-48-4	COBALT	1	3	1		
7440-50-8	COPPER	1	4.5	1		
7439-89-6	IRON	1	5700	10		
7439-92-1	LEAD	1	9.2	0.3		
7439-95-4	MAGNESIUM	1	980	100		
7439-96-5	MANGANESE	1	140	1		
7439-98-7	MOLYBDENUM	1	220	1		
7440-02-0	NICKEL	1	2.5	2		
7440-09-7	POTASSIUM	1	490	100		
7782-49-2	SELENIUM	1	46	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	100	1		
7440-66-6	ZINC	1	13	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-62-130303
 1303059-7

Sample Matrix: SOIL
 % Moisture: 1.0
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.007 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2400	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	10	1		
7440-39-3	BARIUM	1	38	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4900	100		
7440-47-3	CHROMIUM	1	1.4	1		
7440-48-4	COBALT	1	1.7	1		
7440-50-8	COPPER	1	2.5	1		
7439-89-6	IRON	1	4800	10		
7439-92-1	LEAD	1	10	0.3		
7439-95-4	MAGNESIUM	1	1100	100		
7439-96-5	MANGANESE	1	120	1		
7439-98-7	MOLYBDENUM	1	19	1		
7440-02-0	NICKEL	1	2.1	2		
7440-09-7	POTASSIUM	1	820	100		
7782-49-2	SELENIUM	1	32	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	73	1		
7440-66-6	ZINC	1	12	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-63-130303
 1303059-8

Sample Matrix: SOIL
 % Moisture: 1.6
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.005 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2100	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	19	1		
7440-39-3	BARIUM	1	32	10		
7440-41-7	BERYLLIUM	1	2	0.51		
7440-43-9	CADMIUM	1	0.51	0.51	U	
7440-70-2	CALCIUM	1	2800	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1.9	1		
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	4500	10		
7439-92-1	LEAD	1	18	0.3		
7439-95-4	MAGNESIUM	1	690	100		
7439-96-5	MANGANESE	1	84	1		
7439-98-7	MOLYBDENUM	1	47	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	570	100		
7782-49-2	SELENIUM	1	36	0.51		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	1	1	1	U	
7440-31-5	TIN	1	5.1	5.1	U	
7440-62-2	VANADIUM	1	160	1		
7440-66-6	ZINC	1	12	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-64-130303

1303059-9

Sample Matrix: SOIL

% Moisture: 1.4

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.017 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1600	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	5.7	1		
7440-39-3	BARIUM	1	32	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4100	100		
7440-47-3	CHROMIUM	1	1.1	1		
7440-48-4	COBALT	1	1.1	1		
7440-50-8	COPPER	1	1.5	1		
7439-89-6	IRON	1	3400	10		
7439-92-1	LEAD	1	4.6	0.3		
7439-95-4	MAGNESIUM	1	660	100		
7439-96-5	MANGANESE	1	76	1		
7439-98-7	MOLYBDENUM	1	7.4	1		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	510	100		
7782-49-2	SELENIUM	1	10	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	51	1		
7440-66-6	ZINC	1	8.8	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-65-130303

1303059-10

Sample Matrix: SOIL

% Moisture: 1.1

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.026 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1800	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	6.2	0.99		
7440-39-3	BARIUM	1	34	9.9		
7440-41-7	BERYLLIUM	1	0.49	0.49	U	
7440-43-9	CADMIUM	1	0.49	0.49	U	
7440-70-2	CALCIUM	1	5700	99		
7440-47-3	CHROMIUM	1	1.4	0.99		
7440-48-4	COBALT	1	1.7	0.99		
7440-50-8	COPPER	1	2.7	0.99		
7439-89-6	IRON	1	3900	9.9		
7439-92-1	LEAD	1	4.9	0.3		
7439-95-4	MAGNESIUM	1	1000	99		
7439-96-5	MANGANESE	1	91	0.99		
7439-98-7	MOLYBDENUM	1	6.4	0.99		
7440-02-0	NICKEL	1	3.2	2		
7440-09-7	POTASSIUM	1	560	99		
7782-49-2	SELENIUM	1	13	0.49		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	0.99	0.99	U	
7440-31-5	TIN	1	4.9	4.9	U	
7440-62-2	VANADIUM	1	44	0.99		
7440-66-6	ZINC	1	9.1	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-66-130303
 1303059-11

Sample Matrix: SOIL
 % Moisture: 0.6
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.015 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	1500	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	8.2	0.99		
7440-39-3	BARIUM	1	27	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	4600	99		
7440-47-3	CHROMIUM	1	0.99	0.99	U	
7440-48-4	COBALT	1	1.2	0.99		
7440-50-8	COPPER	1	1.8	0.99		
7439-89-6	IRON	1	3600	9.9		
7439-92-1	LEAD	1	6.7	0.3		
7439-95-4	MAGNESIUM	1	670	99		
7439-96-5	MANGANESE	1	79	0.99		
7439-98-7	MOLYBDENUM	1	9.1	0.99		
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	390	99		
7782-49-2	SELENIUM	1	24	0.5		
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	70	0.99		
7440-66-6	ZINC	1	9.1	2		

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Data Package ID: #1303059-1

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-BKGD-E-130303
 1303059-12

Sample Matrix: SOIL
 % Moisture: 1.3
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.017 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	2700	20		
7440-36-0	ANTIMONY	1	2	2		
7440-38-2	ARSENIC	1	1.8	1		
7440-39-3	BARIUM	1	45	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	1100	100		
7440-47-3	CHROMIUM	1	2.3	1		
7440-48-4	COBALT	1	1.7	1		
7440-50-8	COPPER	1	3.1	1		
7439-89-6	IRON	1	4500	10		
7439-92-1	LEAD	1	4.5	0.3		
7439-95-4	MAGNESIUM	1	770	100		
7439-96-5	MANGANESE	1	110	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	2.8	2		
7440-09-7	POTASSIUM	1	640	100		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	6.4	1		
7440-66-6	ZINC	1	12	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC
 Work Order Number: 1303059
 Client Name: Weston Solutions, Inc.
 ClientProject ID: Marquez Mine DRS

MQZ-BKGD-N-130303
 1303059-13

Sample Matrix: SOIL
 % Moisture: 1.6
 Date Collected: 03-Mar-13
 Date Extracted: 07-Mar-13
 Date Analyzed: 11-Mar-13
 Prep Method: SW3050 Rev B

Prep Batch: IP130307-3
 QCBatchID: IP130307-3-1
 Run ID: IT130311-2A1
 Cleanup: NONE
 Basis: Dry Weight
 File Name: 130311A.

Analyst: Mike Lundgreen
 Sample Aliquot: 1.017 G
 Final Volume: 100 ML
 Result Units: MG/KG
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	6000	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	5.3	1		
7440-39-3	BARIUM	1	84	10		
7440-41-7	BERYLLIUM	1	0.6	0.5		
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	18000	100		
7440-47-3	CHROMIUM	1	5.8	1		
7440-48-4	COBALT	1	4.5	1		
7440-50-8	COPPER	1	7.7	1		
7439-89-6	IRON	1	15000	10		
7439-92-1	LEAD	1	10	0.3		
7439-95-4	MAGNESIUM	1	6100	100		
7439-96-5	MANGANESE	1	190	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	8.1	2		
7440-09-7	POTASSIUM	1	1900	100		
7782-49-2	SELENIUM	1	0.97	0.5		
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	14	1		
7440-66-6	ZINC	1	37	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-BKGD-S-130303

1303059-14

Sample Matrix: SOIL

% Moisture: 0.6

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.004 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	830	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	1	1	U	
7440-39-3	BARIUM	1	24	10		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	260	100		
7440-47-3	CHROMIUM	1	1	1	U	
7440-48-4	COBALT	1	1	1	U	
7440-50-8	COPPER	1	1	1	U	
7439-89-6	IRON	1	2100	10		
7439-92-1	LEAD	1	1.4	0.3		
7439-95-4	MAGNESIUM	1	220	100		
7439-96-5	MANGANESE	1	36	1		
7439-98-7	MOLYBDENUM	1	1	1	U	
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	110	100		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	1	1	U	
7440-23-5	SODIUM	1	100	100	U	
7440-28-0	THALLIUM	5	5	5	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	2.8	1		
7440-66-6	ZINC	1	4	2		

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Total ICP Metals

Method SW6010 Revision B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1303059

Client Name: Weston Solutions, Inc.

ClientProject ID: Marquez Mine DRS

MQZ-BKGD-W-130303

1303059-15

Sample Matrix: SOIL

% Moisture: 0.6

Date Collected: 03-Mar-13

Date Extracted: 07-Mar-13

Date Analyzed: 11-Mar-13

Prep Method: SW3050 Rev B

Prep Batch: IP130307-3

QCBatchID: IP130307-3-1

Run ID: IT130311-2A1

Cleanup: NONE

Basis: Dry Weight

File Name: 130311A.

Analyst: Mike Lundgreen

Sample Aliquot: 1.015 G

Final Volume: 100 ML

Result Units: MG/KG

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	1	810	20		
7440-36-0	ANTIMONY	1	2	2	U	
7440-38-2	ARSENIC	1	0.99	0.99	U	
7440-39-3	BARIUM	1	16	9.9		
7440-41-7	BERYLLIUM	1	0.5	0.5	U	
7440-43-9	CADMIUM	1	0.5	0.5	U	
7440-70-2	CALCIUM	1	200	99		
7440-47-3	CHROMIUM	1	0.99	0.99	U	
7440-48-4	COBALT	1	0.99	0.99	U	
7440-50-8	COPPER	1	0.99	0.99	U	
7439-89-6	IRON	1	1800	9.9		
7439-92-1	LEAD	1	1.2	0.3		
7439-95-4	MAGNESIUM	1	180	99		
7439-96-5	MANGANESE	1	49	0.99		
7439-98-7	MOLYBDENUM	1	0.99	0.99	U	
7440-02-0	NICKEL	1	2	2	U	
7440-09-7	POTASSIUM	1	160	99		
7782-49-2	SELENIUM	1	0.5	0.5	U	
7440-22-4	SILVER	1	0.99	0.99	U	
7440-23-5	SODIUM	1	99	99	U	
7440-28-0	THALLIUM	1	0.99	0.99	U	
7440-31-5	TIN	1	5	5	U	
7440-62-2	VANADIUM	1	2.5	0.99		
7440-66-6	ZINC	1	4	2		

UJL

JK

JH

JK

JH

Data Package ID: it1303059-1

Date Printed: Tuesday, March 12, 2013

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ds 3/16/13

Total URANIUM

Method SW6020 Revision A

Sample Results

Lab Name: ALS Environmental – FC
Client Name: Weston Solutions, Inc.
Client Project ID: Marquez Mine DRS
Work Order Number: 1303059
Reporting Basis: Dry Weight
Prep Method: SW3050B
Analyst: Ross Miller

Final Volume: 100 ml
Matrix: SOIL
Result Units: UG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
MQZ-35-130303	1303059-1	03/03/2013	03/07/2013	03/08/2013	2.3	100	130000	99		1.029 g
MQZ-49-130303	1303059-2	03/03/2013	03/07/2013	03/08/2013	1.7	100	11000	100		1.001 g
MQZ-51-130303	1303059-3	03/03/2013	03/07/2013	03/08/2013	2.9	100	4000000	100		1.005 g
MQZ-51-2-130303	1303059-4	03/03/2013	03/07/2013	03/08/2013	2.0	100	3200000	100		1.012 g
MQZ-52-130303	1303059-5	03/03/2013	03/07/2013	03/08/2013	1.4	100	55000	100		1.011 g
MQZ-61-130303	1303059-6	03/03/2013	03/07/2013	03/08/2013	1.8	100	270000	100		1.015 g
MQZ-62-130303	1303059-7	03/03/2013	03/07/2013	03/08/2013	1.0	100	83000	100		1.007 g
MQZ-63-130303	1303059-8	03/03/2013	03/07/2013	03/08/2013	1.6	100	3800000	100		1.005 g
MQZ-64-130303	1303059-9	03/03/2013	03/07/2013	03/08/2013	1.4	100	53000	100		1.017 g
MQZ-65-130303	1303059-10	03/03/2013	03/07/2013	03/08/2013	1.1	100	35000	99		1.026 g
MQZ-66-130303	1303059-11	03/03/2013	03/07/2013	03/08/2013	0.6	100	37000	99		1.015 g
MQZ-BKGD-E-130303	1303059-12	03/03/2013	03/07/2013	03/08/2013	1.3	100	660	100		1.017 g
MQZ-BKGD-N-130303	1303059-13	03/03/2013	03/07/2013	03/08/2013	1.6	100	820	100		1.017 g
MQZ-BKGD-S-130303	1303059-14	03/03/2013	03/07/2013	03/08/2013	0.6	100	140	100		1.004 g
MQZ-BKGD-W-130303	1303059-15	03/03/2013	03/07/2013	03/08/2013	0.6	100	170	99		1.015 g

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: im1303059-1

Date Printed: Tuesday, March 12, 2013

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Total MERCURY

Method SW7471 Revision A

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: Weston Solutions, Inc.
Client Project ID: Marquez Mine DRS
Work Order Number: 1303059
Reporting Basis: Dry Weight
Prep Method: METHOD
Analyst: Sheri Lafferty

Final Volume: 100 g
Matrix: SOIL
Result Units: MG/KG

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
MQZ-35-130303	1303059-1	03/03/2013	03/08/2013	03/11/2013	2.3	1	0.096	0.034		0.609 g
MQZ-49-130303	1303059-2	03/03/2013	03/08/2013	03/11/2013	1.7	1	0.033	0.033	U	0.609 g
MQZ-51-130303	1303059-3	03/03/2013	03/08/2013	03/11/2013	2.9	1	0.94	0.023		0.905 g
MQZ-51-2-130303	1303059-4	03/03/2013	03/08/2013	03/11/2013	2.0	1	1.1	0.033		0.613 g
MQZ-52-130303	1303059-5	03/03/2013	03/08/2013	03/11/2013	1.4	1	0.046	0.034		0.603 g
MQZ-61-130303	1303059-6	03/03/2013	03/08/2013	03/11/2013	1.8	1	0.089	0.034		0.601 g
MQZ-62-130303	1303059-7	03/03/2013	03/08/2013	03/11/2013	1.0	1	0.066	0.033		0.607 g
MQZ-63-130303	1303059-8	03/03/2013	03/08/2013	03/11/2013	1.6	1	0.1	0.033		0.616 g
MQZ-64-130303	1303059-9	03/03/2013	03/08/2013	03/11/2013	1.4	1	0.033	0.033	U	0.61 g
MQZ-65-130303	1303059-10	03/03/2013	03/08/2013	03/11/2013	1.1	1	0.033	0.033	U	0.611 g
MQZ-66-130303	1303059-11	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.059	0.033		0.617 g
MQZ-BKGD-E-130303	1303059-12	03/03/2013	03/08/2013	03/11/2013	1.3	1	0.033	0.033	U	0.609 g
MQZ-BKGD-N-130303	1303059-13	03/03/2013	03/08/2013	03/11/2013	1.6	1	0.034	0.034	U	0.6 g
MQZ-BKGD-S-130303	1303059-14	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.033	0.033	U	0.608 g
MQZ-BKGD-W-130303	1303059-15	03/03/2013	03/08/2013	03/11/2013	0.6	1	0.033	0.033	U	0.601 g

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: hg1303059-1

Date Printed: Tuesday, March 12, 2013

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Handwritten signature and date: 3/20/13

APPENDIX F

REFERENCE DOCUMENTATION

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BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT
Ground Water Quality Bureau

Harold Runnels Building
1190 St. Francis Drive, P.O. Box 5469
Santa Fe, NM 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
www.nmenv.state.nm.us



Memorandum

To: LaDonna Turner, Site Assessment Manager
Technical and Enforcement Branch
U.S. Environmental Protection Agency, Region 6

From: Dana Bahar, Manager, Superfund Oversight Section
Ground Water Quality Bureau, New Mexico Environment
Department

Date: October 8, 2010

Subject: Pre-CERCLIS Screening Assessment of the Marquez Mine (Grants
Mining District), McKinley County, New Mexico: Further action under
CERCLA recommended

Site name	Marquez Mine	Alternative names	Marcus, Calumet
Street address	not applicable	City	not applicable
Zip code	not applicable	State	New Mexico
		County	McKinley
Latitude	35.34226	Longitude	107.75867 TRS T13N, R9W, Sec 23 NE/SW

35 20 3593
36 01

101 45 35-8890

Site physical description:

The Marquez Mine ("Site") is located approximately 2.5 miles east of the junction of State highways 509 and 605 (Ref. 1). The Site is approximately 13.5 miles directly north of Grants, NM. The Site is located in the Dos Lomas 7.5 minute USGS 1:24000 scale topographic map quadrangle at latitude 35.34226, longitude 107.75867, and elevation approximately 6,912 ft above sea level. The total area of the Site is unknown (Ref. 2).

Figure 1 is a general location map and Figure 2 is a site map of Section 23. Figure 3 is a Google Earth figure-photograph. Figures 1, 2, and 3 are contained in Attachment A.

The Site is located along the southern side of the San Mateo Creek alluvial drainage channel north of La Jara Mesa (Ref. 2).

Site identification:

The Site is one of numerous legacy uranium sites within the Grants Mining District, Ambrosia Lake Subdistrict, San Mateo Creek watershed, Bluewater Underground Basin.

Site summary: The Site is part of the Poison Canyon uranium mineralization trend which occurs in the Westwater Canyon Member of the Morrison Formation. The Marquez is the largest uranium deposit within the

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Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.
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Poison Canyon trend (Ref. 3). Based on a visit by Anderson (1980), the number of disturbed acres is unknown (Ref. 2).

Field radioactivity readings were measured by Anderson in 1980 (Ref. 3). The main dump measured 800-2,500 cps (48,000 - 150,000 cpm or 274 - 857 $\mu\text{R/hr}$). A stockpile of ore measured 10,000 cps (600,000 cpm or 3,428 $\mu\text{R/hr}$). High readings were measured on a streambed road near or leading to the site but no concentrations were provided with reference to a background reading to help gage the road readings as "high" (Ref. 3). A 10 degree incline shaft was noted at the site (Ref. 3). The field notes by Anderson (1980) also indicated buildings were removed but the concrete building foundations were still present; the main portal was secured with mesh metal gate; additional waste rock-ore dumps were present; there was mining-related debris near the San Mateo Creek channel; and a waste rock and/or stockpile of ore was present near south creek bank.

In 1987 Santa Fe Pacific Gold Company backfilled the declined adit shaft and removed other structures. The Site was regraded with approximately 12 inches of top soil but apparently the soil was mostly sand (Ref. 3).

Targets:

The Site is located adjacent to the south bank of the alluvial channel for the San Mateo Creek surface water drainage system. The San Mateo Creek alluvial drainage system is in hydraulic connection with bedrock aquifer units in the area. There is a potential for contaminant releases at the Site to become mobilized by wind and surface water to where off site exposure is a possibility. The Site is located less than 0.5 mile from Highway 609 and could be accessed by trespassers traveling along the road. It is assumed the Site is accessible by cattle and local animals like deer, coyotes, and prairie dogs.

Potential impacts to the alluvial ground water system during Site operation may have occurred from ground water discharges from mine workings to settling ponds and ultimately to the San Mateo Creek drainage. Some portion of discharged contaminants may adhere to sediments, and propagate episodically downgradient in response to stream flows within the San Mateo Creek drainage. Current details of alluvial ground water flow are unknown, but are thought to follow general topographic slope (i.e., locally northwest from the site, and generally south in the direction of surface water flow). Such alluvial ground water impacts may also propagate into underlying bedrock aquifers through stratigraphic, structural, and/or anthropogenic (e.g., leaky wells, mine shafts) interconnections. Additional contaminant mobilization in ore-bearing Westwater Canyon Formation could result from oxygenated ground water influx resulting from progressive basin recharge following cessation of mining activities.

Well records from the New Mexico Office of the State Engineer that are located within a four-mile radius of the Site are shown in Table 1 (Ref. 4). The Site is located less than a few hundred feet from the south bank of the channel for San Mateo Creek (SMC). Five domestic wells are located between 0.75 - 1.0 miles of the Site.

Site ownership and Potential Responsible Parties:

The history of site ownership and potential responsible parties information includes the following. From late 1957 to August 1958 Farris Mines, of Grants, drove the main decline leading from the surface down to the ore zone, estimated at approximately 1,400 feet or more from the surface (Ref. 2). Farris Mines was a contractor to the site owner, Calumet and Hecla Inc., of Chicago, Illinois. From 1958 to 1964 Calumet & Hecla owned and operated the Site, and from 1965 to 1966 United Nuclear Corporation worked the Site. From 1970 to 1972 the Kerr-McGee Corporation controlled the Site. The Site was idle and was not mined by the Kerr-McGee Corporation, although leaching operations were planned (Ref. 2).

Ted and Dianne Schmitt own the surface rights and Newmont Mining Corp. owns the mineral rights at the Site. The Site is located on private land (Ref. 2 and Ref. 7).

File review:

Files and information sources that were reviewed for this assessment are listed below.

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Site reconnaissance:

NMED made an attempt on July 26, 2010 to access the Site, but the property owner of the Marquez Mine was not home.

In October 2009, the USEPA, Office of Emergency Management, National Decontamination Team from Cincinnati, OH conducted an Aerial Radiological Survey of the Grants and Cebolleta Land Grant Areas in New Mexico (Ref. 6). The Airborne Spectrophotometric Environmental Collections Technology (ASPECT) program was employed to survey about 200 square miles and identify areas where surface uranium concentrations were in excess of background concentrations. The survey produced contour plots of: 1) total count rate in counts per second (cps); 2) exposure rate in microroentgen per hour ($\mu\text{R/hr}$); 3) uranium concentration in picocuries per gram (pCi/g); and 4) a plot of individual data points color coded for statistical significance representing deviation from normal background conditions. The survey area that includes the Marquez Mine is presented in Figures 3, 4, and 5. Figures 3 and 5 clearly indicate the level of gamma radioactivity and soil uranium concentration are elevated at the Marquez Mine. The exposure rate appears to be in the 40-60 $\mu\text{R/hr}$ for the Marquez Mine. When the gamma count rate maximum value of 13,500 cps is converted to counts per minute ($\text{cps} \times 60 \text{ sec/min} = 816,000 \text{ cpm}$) then converted to $\mu\text{R/hr}$ ($816,000 / 175 \text{ cpm}/\mu\text{R}$), the 4,628 $\mu\text{R/hr}$ value does not agree with the ASPECT survey results (4,628 $\mu\text{R/hr}$ vs. 40-60 $\mu\text{R/hr}$).

A field visit-site assessment was performed at the Site on September 19, 2010 (Ref. 7) by a contractor to the New Mexico Energy Minerals and Natural Resources Department. The assessment included field notation, radioactivity measures at 0 and 4 feet above the ground surface, and photographs. Radiation readings were taken using a Ludlum Model 192 uR ratemeter (Ref. 7). The background gamma radiation reading was measured at 14 and 13 uR/hr at 0 and 4 feet, respectively. Radiation readings from 12 locations at 0 feet ranged from 21 to 2,200 uR/hr and averaged 406.9 uR/hr (Ref. 7). When the 0 feet high radiation readings are compared to the background radiation level of 14 uR/hr, the radiation at the Site ranged from 1.5 to 157.1 above the background radiation level. Figure 6 which illustrated the measurements is taken from the AUM report (Ref. 7). Radiation readings at 4 feet high ranged from 22 to 380 uR/hr and averaged 121 uR/hr (Ref. 7). When the 4 feet high radiation readings are compared to the background radiation level of 14 uR/hr, the radiation at the Site ranged from 1.6 to 27.1 above the background radiation level.

Recommendation:

Additional investigation of the Site under CERCLA authority is recommended to assess the areal extent of elevated radioactivity readings noted in the Site reconnaissance to determine if threats to human health and the environment exist. NMED also recommends assessment of sediments in the Site vicinity in order to evaluate the potential occurrence of impacts from dispersal of waste materials that have been left on-Site.

The Site should be formally characterized for the radionuclide concentration in the soil profile following a methodology that incorporates a specific grid design and sample node spacing interval to enable the correlation of field readings with laboratory soil sample analysis. The field and laboratory data from the next phase of Site characterization and assessment would indicate the extent of potential hazardous material release and the threat it would present to on site and off site receptors via the soil exposure pathways. Potential physical hazards at the Site, especially the long term performance of soil cover and backfilling of the decline should be assessed and mitigated as soon as possible.

Currently, the existence of regional impacts from legacy uranium sites to the ground water system has not been determined. Ground water had to be pumped from the Marquez mine in order to access the ore deposits, but the location of the effluent discharge is not evident. The bank of San Mateo Creek near the Site should be surveyed to attempt to determine where the effluent discharge may have been routed. Radiological surveying and limited sampling of the 0-6 inch interval of soil at the Site is recommended to determine the extent potential release to the surface. Some samples of the soil profile at intervals of 12, 24, 36, and 48 inches may be appropriate at some locations if field and/or laboratory results indicate more characterization is necessary. A generalized investigation of potential alluvial ground water impacts from "wet" former uranium mines within the Grants Mining District is recommended as part of regional ground water quality characterization. If this generalized investigation were to indicate a potential for alluvial ground water impacts, on-Site installation of one or more monitor wells then should be considered.

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Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.
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References:

1. USGS, 1957. Dos Lomas, N, Mex. 7.5 minute quadrangle topographic map, 1:24,000 scale.
2. New Mexico Energy, Mineral and Natural Resources Department, undated. "2007-07-20 to NMED-GWQ-Sfund.xls." Spreadsheet excerpt.
3. Rapaport, I., 1963. Uranium deposits of the Poison Canyon Ore Trend, Grants District, in Geology and Technology of the Grants Uranium Region, New Mexico Bureau of Mines and Mineral Resources, Memoir 15, pp. 122-135.
4. New Mexico Office of the State Engineer. "May_08_wells." Shapefile.
5. McLemore, Virginia T. and William L. Chenoweth, revised December 1991. "Uranium mines and deposits in the Grants district, Cibola and McKinley counties, New Mexico." New Mexico Bureau of Mines and Mineral Resources Open-file report 353.
6. U.S. Environmental Protection Agency, Aerial Radiological Survey of the Grants and Cebolleta Land Grant Areas in New Mexico, Office of Emergency Management, National Decommissioning Team, Cincinnati, OH, January 2010, 85 p.
7. INTERA Draft Report September 24, 2010. Abandoned Uranium Mine Assessment for the Marquez Site (NM0039) prepared for the New Mexico Energy, Minerals and Natural Resources Department, 34 p.

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Table 1. Well records from the New Mexico Office of the State Engineer located within a 0 - 4 mile distance ring from the Marquez Mine Site, Grants Mining District, New Mexico.

distance from site (miles)	POD REC NBR	POD BASIN	POD NBR	COUNTY	well completion date	DEPTH WELL (ft)	DEPTH WATER (ft)	CASING SIZE (in)	owner name	USE	Diversion (acre ft/yr)
0 - 0.25											
0.25 - 0.50											
0.50 - 0.75											
0.75 - 1.0	708	B	415	McKinley	3/23/1978	32.00	15.00	5.00	NEW MEXICO E.I.A.	Domestic	3
0.75 - 1.0	938	B	415	McKinley	8/10/1977	95.00	72.00	5.00	NEW MEXICO E.I.A.	Domestic	3
0.75 - 1.0	538	B	415	McKinley	8/11/1977	90.00	73.00	5.00	NEW MEXICO E.I.A.	Domestic	3
0.75 - 1.0	898	B	415	McKinley	8/12/1977	80.00	74.00	5.00	NEW MEXICO E.I.A.	Domestic	3
0.75 - 1.0	259	B	1104	McKinley	4/2/1986	303.00	247.00	4.00	SANDOVAL	Domestic	3
1.0 - 2.0	585	B	456	Valencia		0.00	0.00	0.00	SANDOVAL	Stock	3
1.0 - 2.0	180546	B	558	McKinley		0.00	0.00	0.00	N.M. STATE HWY DEPT.	Public	3
1.0 - 2.0	1391	B	659	McKinley	1/18/1979	220.00	190.00	0.00	GARCIA	Domestic	3
1.0 - 2.0	1004	B	861	McKinley		0.00	0.00	0.00	SANDOVAL	Domestic	3
1.0 - 2.0	804	B	1115	McKinley	7/21/1986	478.00	204.00	4.00	MARQUEZ	Domestic	3
1.0 - 2.0	397	B	1190	McKinley	8/31/1989	390.00	37.00	0.00	MARQUEZ	Stock	3
1.0 - 2.0	209713	B	1836	McKinley	5/10/2005	260.00	80.00	4.00	GARCIA	Domestic	3
2.0 - 3.0	183017	B	390	Valencia	12/31/1974	1800.00	900.00	6.63	FERNANDEZ CO. LTD	Irrigation	1386
2.0 - 3.0	375	B	997	Cibola		0.00	0.00	0.00	MARQUEZ	Municipal	3
2.0 - 3.0	190818	B	1544	McKinley	6/14/2003	715.00	624.00	5.00	JACKSON	Domestic	3
3.0 - 4.0	1386	B	414	McKinley		0.00	0.00	0.00	RESERVE OIL & MINERALS CORP	Sanitary	3
3.0 - 4.0	18	B	415	McKinley	8/30/1977	59.00	30.00	5.00	NEW MEXICO E.I.A.	Domestic	3
3.0 - 4.0	992	B	415	McKinley	8/30/1977	72.00	30.00	5.00	NEW MEXICO E.I.A.	Domestic	3
3.0 - 4.0	185	B	415	McKinley	8/30/1977	54.00	30.00	5.00	NEW MEXICO E.I.A.	Domestic	3
3.0 - 4.0	328	B	415	McKinley	8/30/1977	57.00	32.00	5.00	NEW MEXICO E.I.A.	Domestic	3
3.0 - 4.0	155005	B	848	McKinley		0.00	0.00	0.00	KERR-MCGEE NUCLEAR CORP.	Mining	0
3.0 - 4.0	155007	B	848	McKinley	5/14/1981	1611.00	1315.00	4.50	KERR-MCGEE NUCLEAR CORP.	Mining	0
3.0 - 4.0	186776	B	848	McKinley		0.00	0.00	0.00	KERR-MCGEE NUCLEAR CORP.	Mining	0
3.0 - 4.0	197513	B	851	McKinley		0.00	0.00	0.00	KERR-MCGEE NUCLEAR CORP	Dewatering	0
3.0 - 4.0	1412	B	993	McKinley	7/21/1969	1398.00	0.00	0.00	RIO ALGOM MINING LLC	Mining	4735
3.0 - 4.0	1127	B	993	McKinley	1/1/1960	1533.00	0.00	0.00	RIO ALGOM MINING LLC	Mining	4735
3.0 - 4.0	1466	B	1084	McKinley	1/1/1983	320.00	60.00	0.00	FERNANDEZ COMPANY	Stock	0
3.0 - 4.0	175541	B	1485	McKinley	1/28/2002	580.00	280.00	4.00	MARQUEZ	Domestic	3
3.0 - 4.0	227069	SP	3384	McKinley		0.00	0.00	0.00	ROUNDY	Irrigation	0
POD REC NBR: point of diversion record number.						B: Bluewater Basin					
POD BASIN: point of diversion basin						SP: Surface Permit					
POD NBR: point of diversion number											

Ms. LaDonna Turner
Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.
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Attachment A

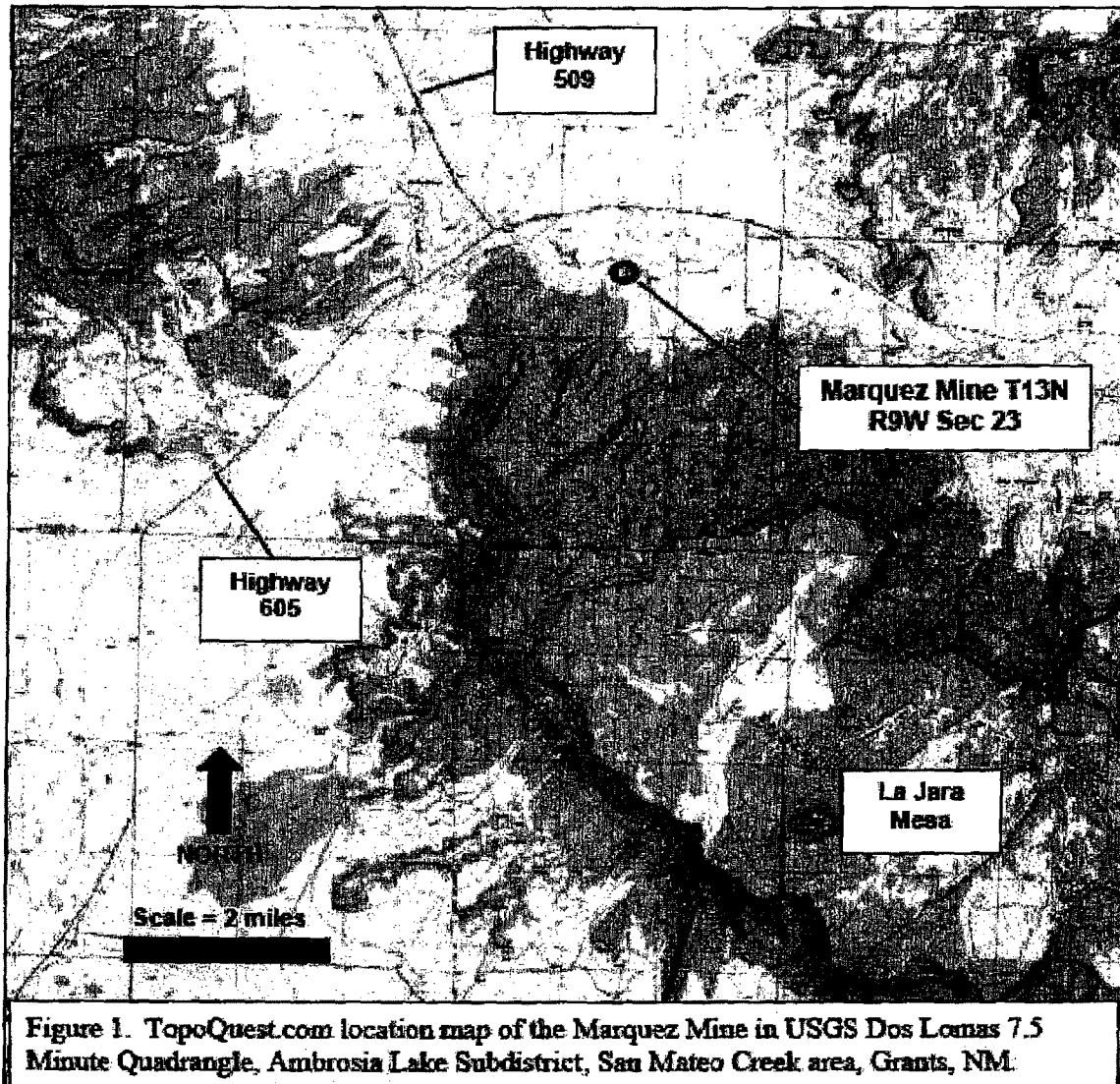
Figures 1 through 6

Ms. LaDonna Turner

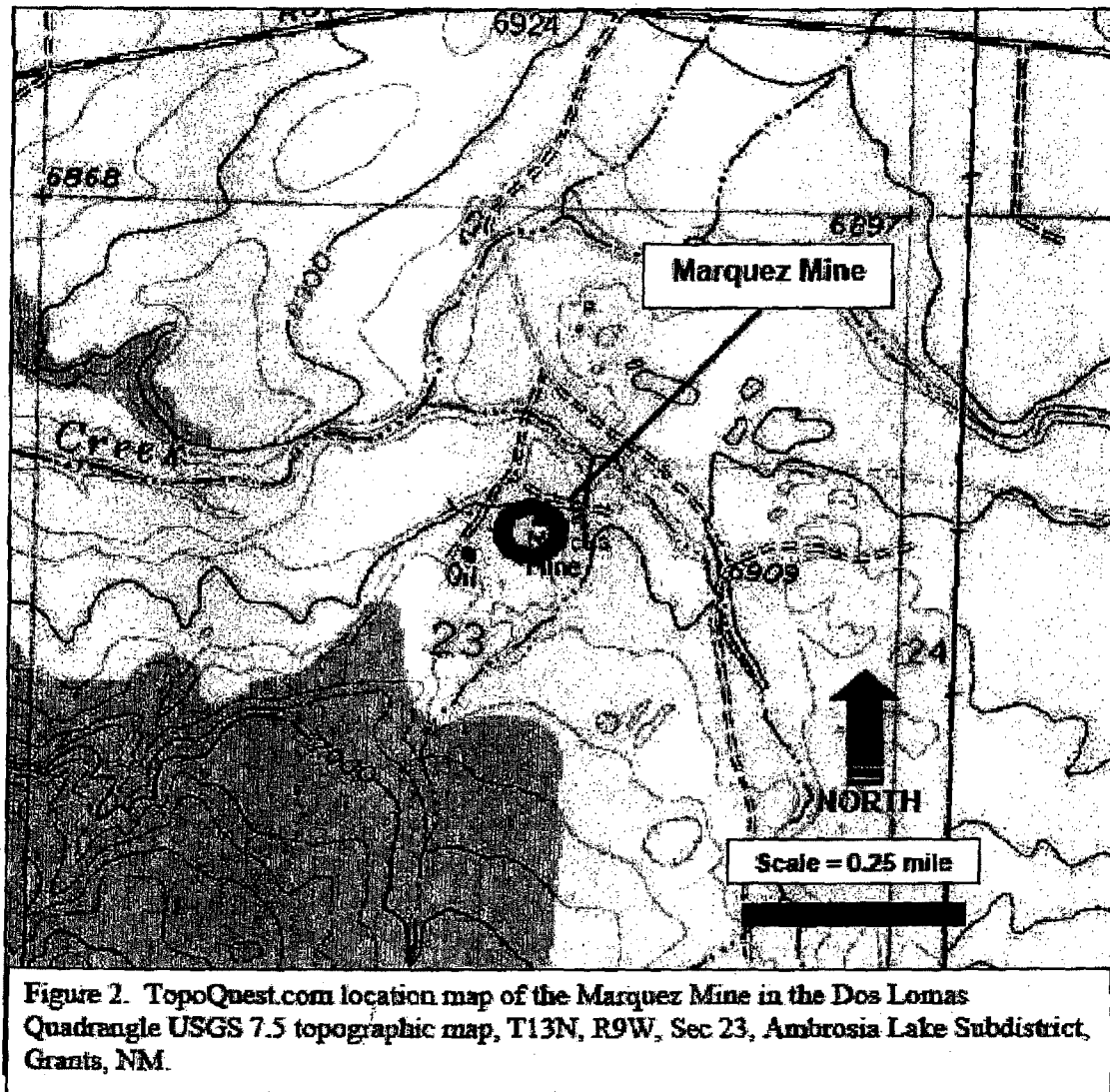
Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.

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Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.
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Ms. LaDonna Turner
Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.
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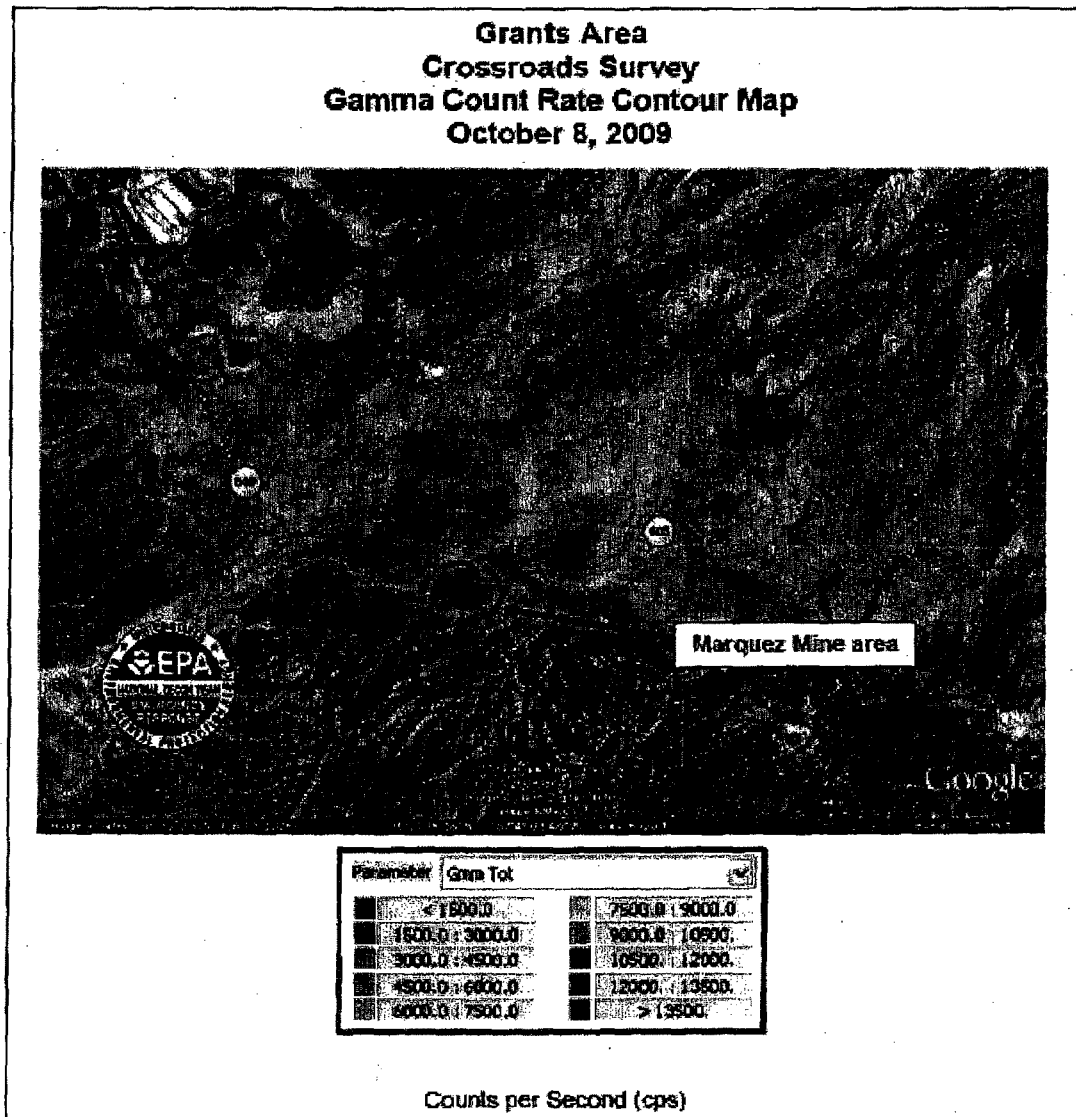


Figure 3. Aerial radiological survey Image 9 of the Grants, NM area conducted by USEPA in October 2009 presenting gamma count rate contour map data in counts per second (cps).

Ms. LaDonna Turner

Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.

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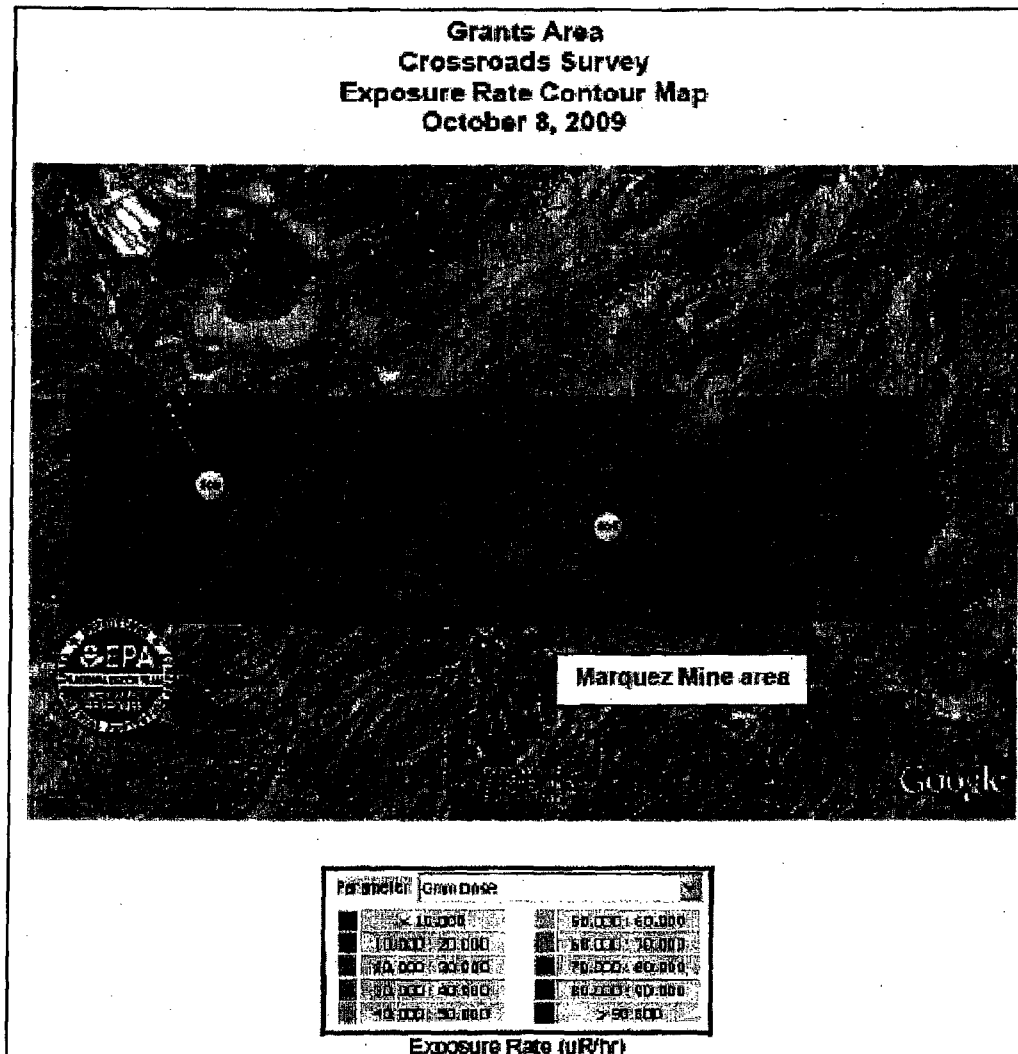


Figure 4. Aerial radiological survey Image 21 of the Grants, NM area conducted by USEPA in October 2009 presenting exposure rate contour map data in microRoentgens /hr ($\mu\text{R/hr}$).

Ms. LaDonna Turner
Pre-CERCLIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.
October 8, 2010
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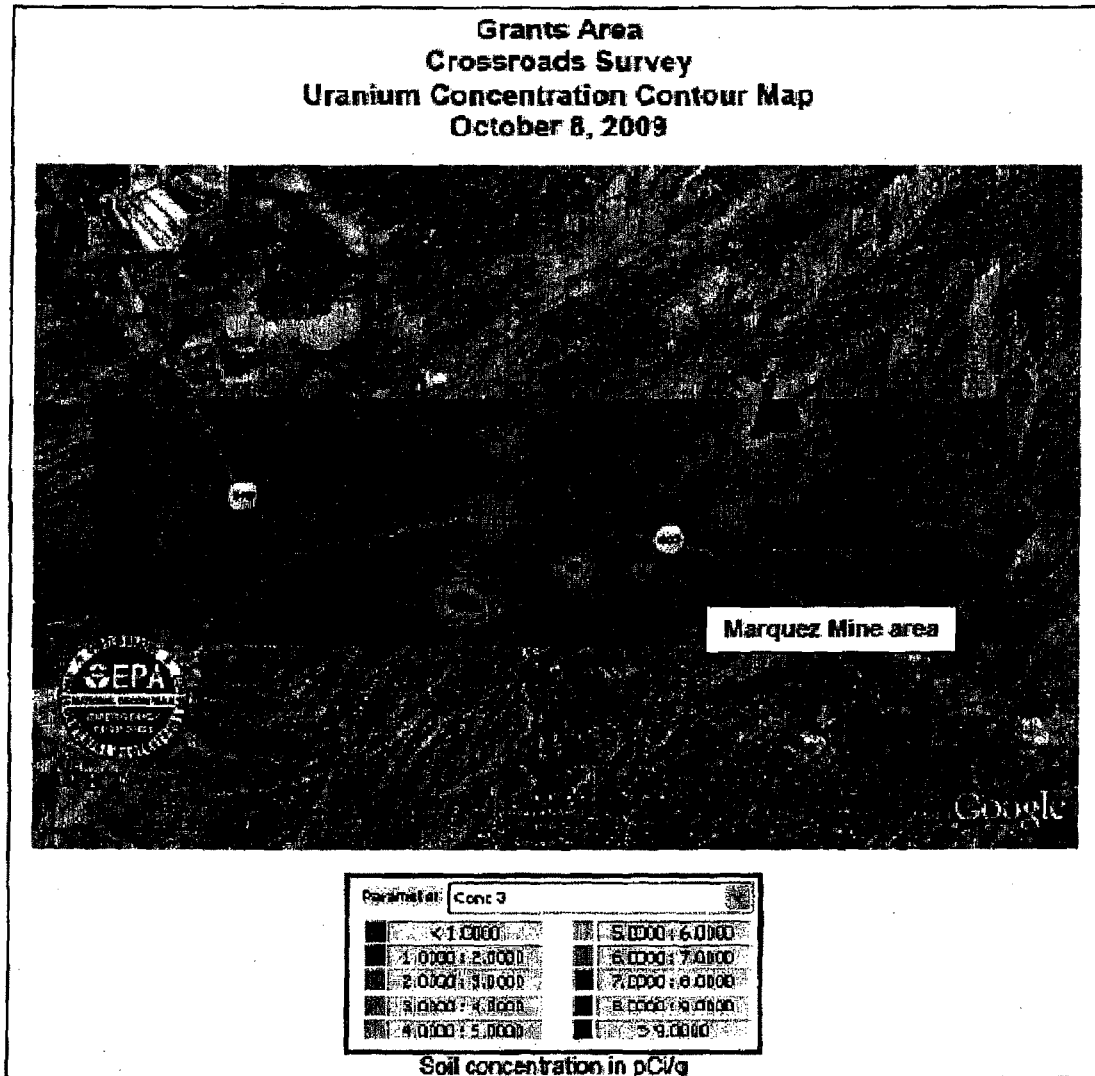
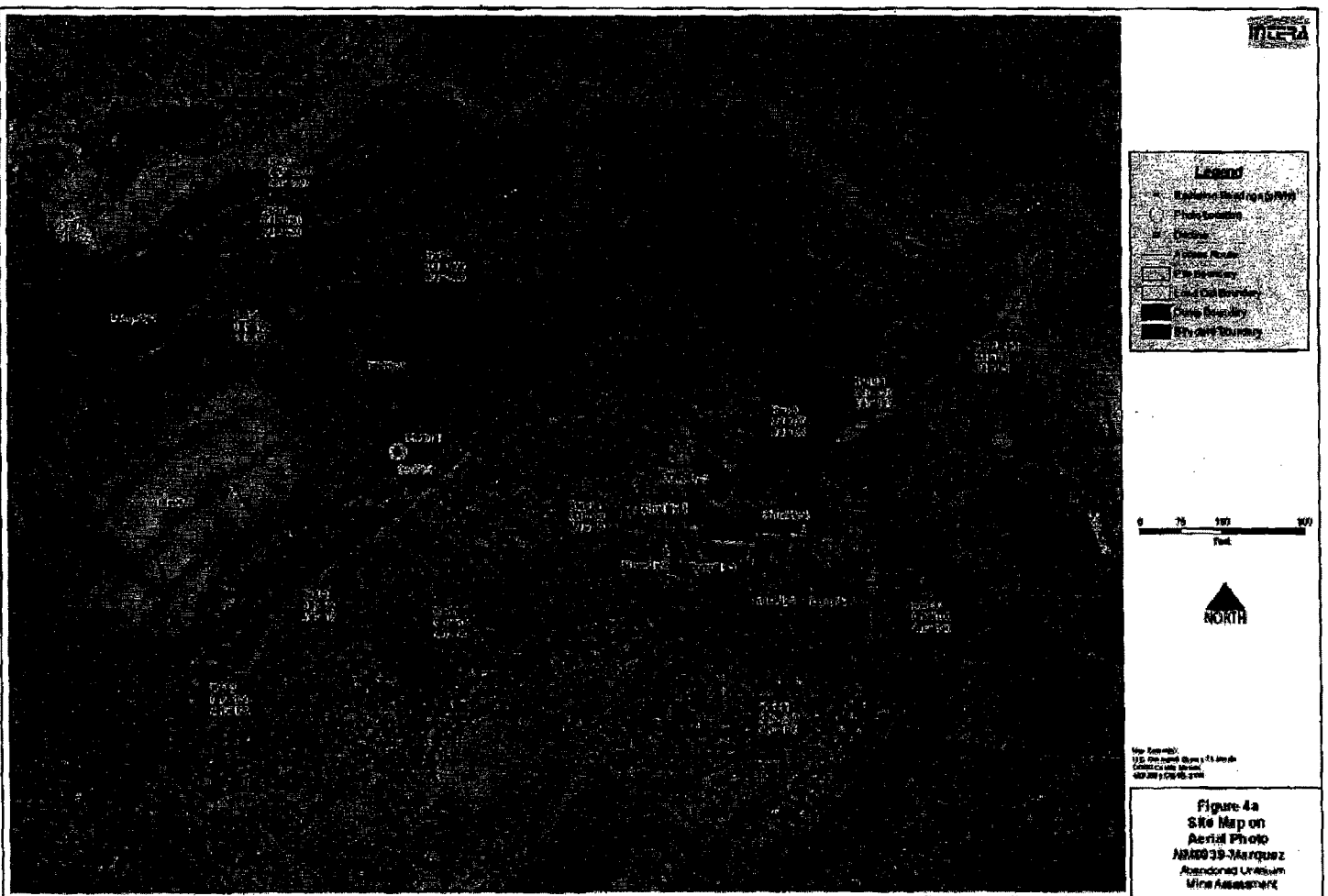


Figure 5. Aerial radiological survey Image 32 of the Grants, NM area conducted by USEPA in October 2009 presenting soil uranium concentration contour map data in picoCuries per gram (pCi/g).

Ms. LADonna Turner
Pre-CIECIS screening assessment of the Marquez Mine (Grants Mining District), McKinley County, NM.
October 8, 2010
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APPENDIX G

TDD No. TO-0035-12-11-02

**Assessment/Inspection Activities -
Enforcement Funds (0035)
Weston Solutions, Inc.**

! = required field ☐ Moved To EAS

Note: Remaining Amount
includes \$0.00 in Reserve.

TDD Name: Marquez Mine		! Period: Base Period
! Purpose: Work Assignment Initiation		
! Priority: High	! Start Date: 11/14/2012	
Overtime: Yes	! Completion Date: 10/31/2013	
! Funding Category: Enforcement Funds	Invoice Unit:	
! Project/Site Name: Marquez Mine		WorkArea: ASSESSMENT/INSPECTIONS ACTIVITIES
Project Address: Section 23,T13N,R9W; 2.5 miles east of the junction of State Hwys 509 and 605 and 13.5 miles directly north of Grants , NM		Activity: Integrated Assessment (IA)
County: McKinley	Work Area Code:	
City, State: , NM	Activity Code: IA	
Zip:	EMERGENCY CODE: <input type="checkbox"/> KAT <input type="checkbox"/> RIT	
! SSID: A6FN	FPN:	
CERCLIS: NMN000607486	Performance Based: No	
Operable Unit:		

Authorized TDD Ceiling:	Cost/Fee	LOE (Hours)
Previous Action(s):	\$0.00	0.0
This Action:	\$30,000.00	0.0
New Total:	\$30,000.00	0.0

Specific Elements Assess the potential for short or long term clean-up actions., Perform field screening and analysis of samples.

Description of Work:

All activities performed in support of this TDD shall be in accordance with the contract and TO PWS.

The Grants Mining District provided significant uranium extraction and production in New Mexico from the 1950s until late into the 20th century. There are three mining sub-districts within the Grants Mining District: Ambrosia Lake, Laguna, and Marquez. Land ownership within these sub-districts consists of public, tribal, tribal trust and private property. These mining sub-districts contain 97 former legacy uranium mines and five mill sites. EPA is currently assessing the mine sites for releases of hazardous substances that may have impacted soil, surface water, sediment and ground water. Under this TDD, the contractor shall investigate mine water discharge locations, sample potentially impacted soil for elevated concentrations and radioactivity of elemental uranium and radionuclides, sample any surface water and sediment present for metals and radionuclides, and sample any accessible groundwater wells in the immediate area of the Marquez Mine site. The contractor shall document mine site features (e.g., open and plugged mine portals, waste rock piles, protore stockpiles, mining related structures, etc.), surface drainage features, ground water wells and all sample locations with photographs, descriptions, and geospatially. The contractor shall prepare and submit to EPA for review and approval a draft and final report for the site. Coordinate with SAM, Mark Purcell at purcell.mark@epa.gov or 214-665-6707 upon receipt of the TDD.

Accounting and Appropriation Information

SFO: 22

Line	DCN	IFMS	Budget / FY	Approp. Code	Budget Org Code	Program Element	Object Class	Site Project	Cost Org Code	Amount

1	ENC016	XXX	11	TD	06S	501EC7	2505	A6FNIA00	C001	\$30,000.00
---	--------	-----	----	----	-----	--------	------	----------	------	-------------

Funding Summary:		Funding
Previous:		\$0.00
This Action:		\$30,000.00
Total:		\$30,000.00

Funding Category

Enforcement Funds

Section

- Signed by Mark Purcell/R6/USEPA/US on 11/07/2012 10:02:26 AM, according to Jeff Criner/start6/rfw-

: Mark Purcell

Date: 11/07/2012

Phone #:

Project Officer Section - Signed by Cora Stanley/R6/USEPA/US on 11/08/2012 12:12:41 PM, according to Jeff Cr

Project Officer: Linda Carter

Date: 11/07/2012

Contracting Officer Section - Signed by Cora Stanley/R6/USEPA/US on 11/08/2012 12:12:41 PM, according to Jeff

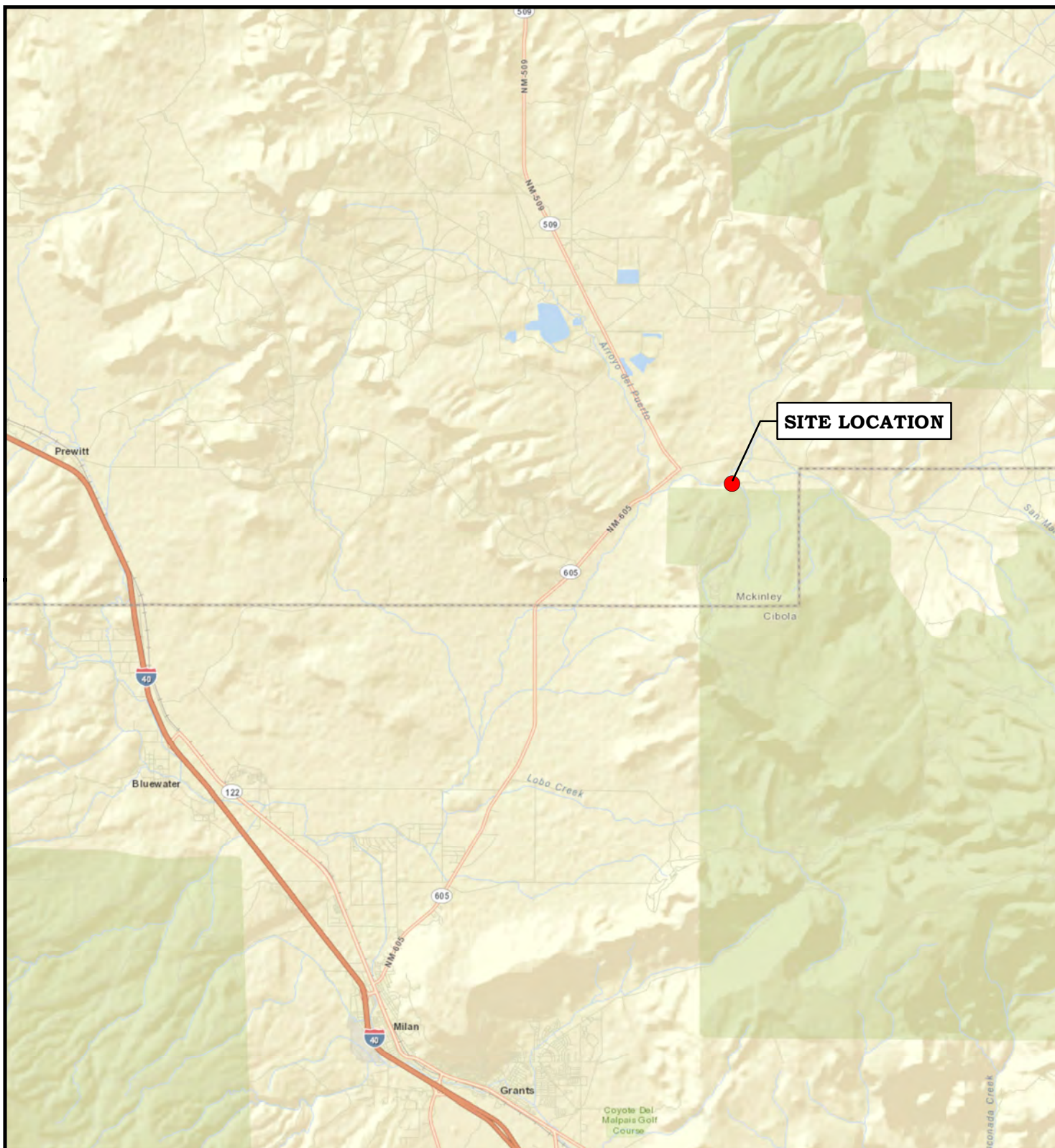
Contracting Officer: Cora Stanley

Date: 11/08/2012

Contractor Section

Contractor Contact:

Date:



0 3 6

SCALE IN MILES

LEGEND

● MARQUEZ URANIUM MINE LOCATION



NEW MEXICO



US EPA REGION 6

FIGURE 1-1
SITE LOCATION MAP
MARQUEZ URANIUM MINE
MCKINLEY COUNTY, NEW MEXICO

DATE
DEC. 2012

PROJECT NO
20406.012.035.0783.01

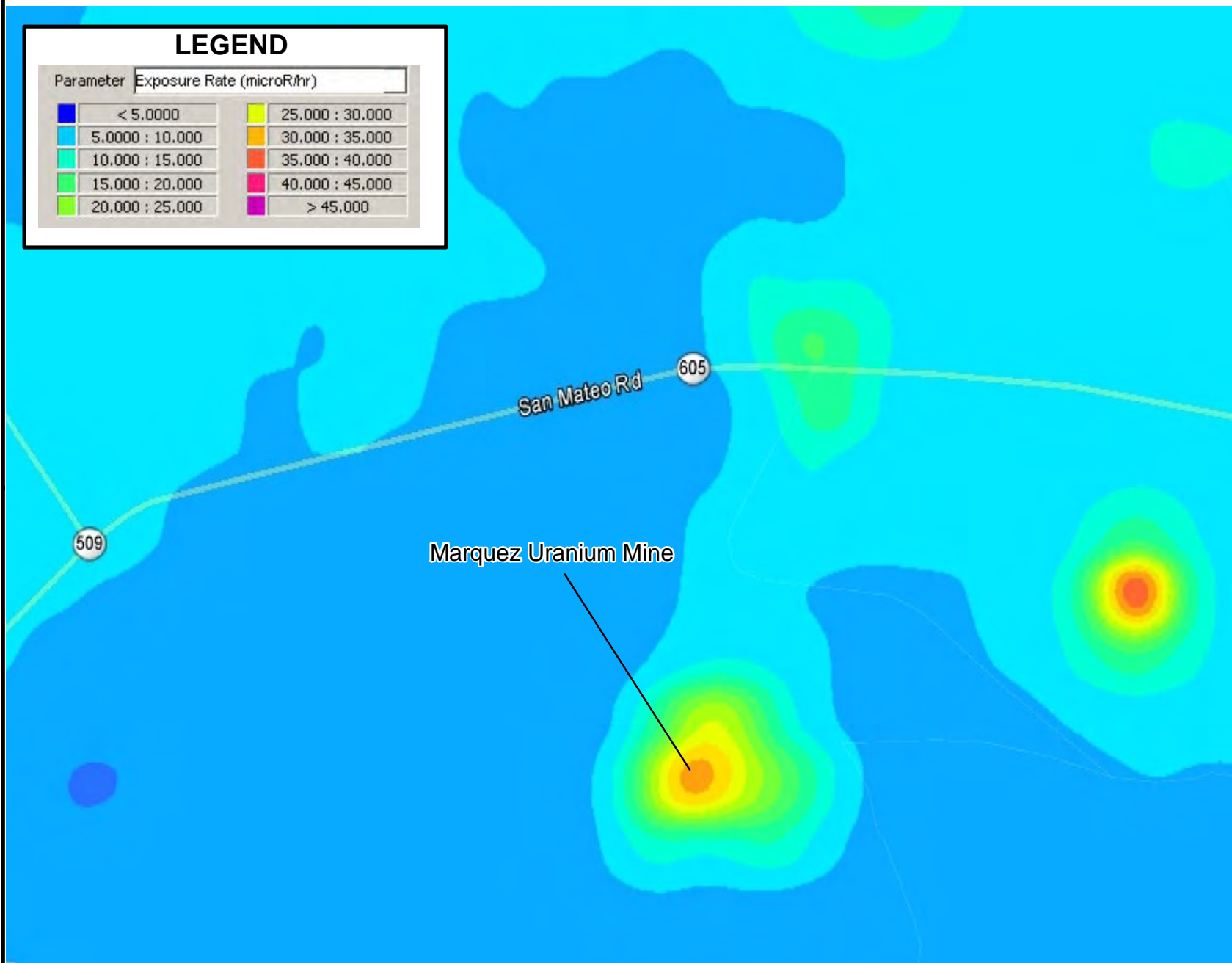
SCALE
AS SHOWN

TDD NO: TO-0035-12-11-02
 CERCLIS NO.: NMN00607486
 SOURCE: ESRI STREETMAPS

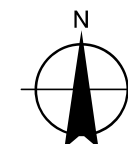
LEGEND

Parameter Exposure Rate (microR/hr)

< 5.0000	25.000 : 30.000
5.0000 : 10.000	30.000 : 35.000
10.000 : 15.000	35.000 : 40.000
15.000 : 20.000	40.000 : 45.000
20.000 : 25.000	> 45.000



*Units are in microroentgen per hour (uR/hr)



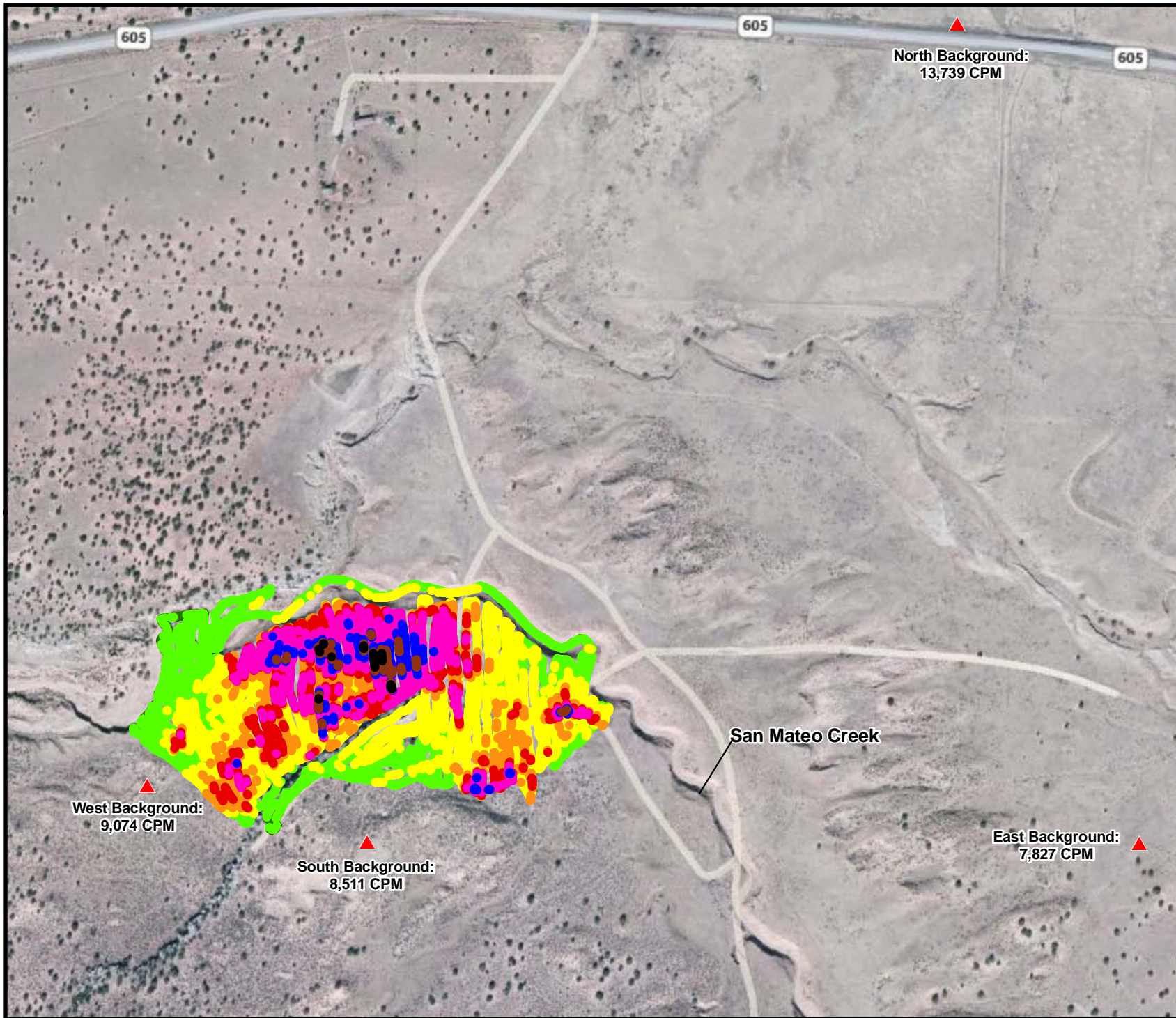
TDD NO: TO-0035-12-11-02
CERCLIS: NMN000607486
SOURCE: GOOGLE EARTH



US EPA REGION 6

FIGURE 1-2
MARQUEZ URANIUM MINE
EXPOSURE RATE MAP
EPA ASPECT OVERFLIGHT
DATE: 08/23/2011
MCKINLEY COUNTY, NEW MEXICO

DATE JAN 2013	PROJECT NO 20406.012.035.0783.01	SCALE N/A
------------------	-------------------------------------	--------------

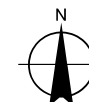


LEGEND

Gamma Scan Results

In CPM

- 0 - 9787 (<1X BKGD)
- 9788 - 19574 (1X - 2X BKGD)
- 19575 - 49999
- 50000 - 74999
- 75000 - 99999
- 100000 - 199999
- 200000 - 299999
- 300000 - 499999
- 500000 - 675933
- ▲ Background Locations (4)



0 400 800
SCALE IN FEET

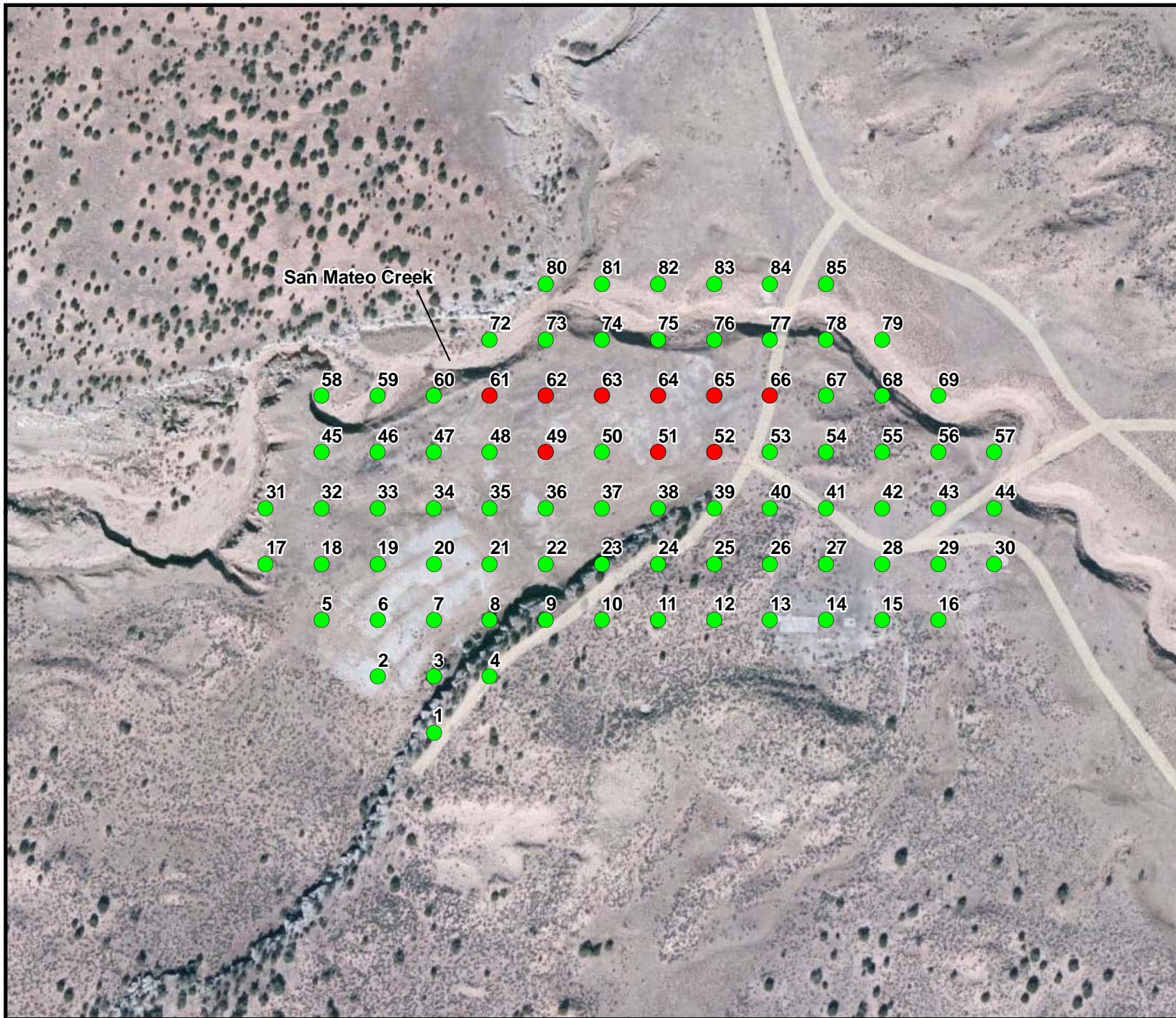
TDD NO: TO-0035-12-11-02
CERCLIS: NMN000607486



US EPA REGION 6

FIGURE 3-1
ASSESSMENT AREA MAP
MARQUEZ URANIUM MINE
SAN MATEO AREA
McKINLEY COUNTY, NEW MEXICO

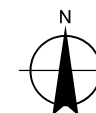
DATE MAY 2013	PROJECT NO 20406.012.035.0783.01	SCALE AS SHOWN
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LEGEND

- Soil Sample Locations (9)
- Remaining Locations (74)

Note: Locations 70 and 71 were omitted due to inaccessibility. All four background locations were sampled.



0 250 500
SCALE IN FEET

TDD NO: TO-0035-12-11-02
CERCLIS: NMN000607486



US EPA REGION 6

FIGURE 3-2
STATIONARY READINGS MAP
MARQUEZ URANIUM MINE
SAN MATEO AREA
MCKINLEY COUNTY, NEW MEXICO

DATE MAY 2013	PROJECT NO 20406.012.035.0783.01	SCALE AS SHOWN
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Table 3-1
Site Gamma Radiation Distribution
Marquez Uranium Mine
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico

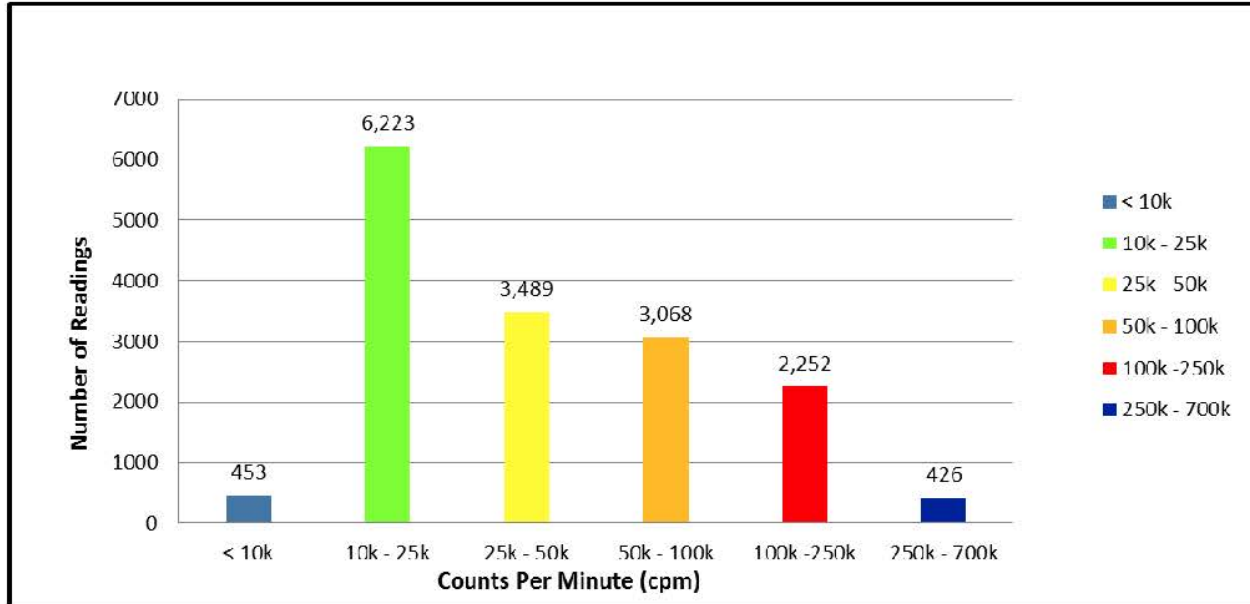


Table 3-2
Stationary Gamma Measurements Summary
Marquez Uranium Mine
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico

Stationary Location ID	Gamma Activity (Counts Per Minute)	Remark
MQZ-01-130302	9,558	
MQZ-02-130302	87,161	>2X Background
MQZ-03-130302	20,660	>2X Background
MQZ-04-130302	13,307	
MQZ-05-130302	18,932	
MQZ-06-130302	77,093	>2X Background
MQZ-07-130302	39,241	>2X Background
MQZ-08-130302	18,868	
MQZ-09-130302	17,980	
MQZ-10-130302	15,158	
MQZ-11-130302	16,840	
MQZ-12-130302	16,723	
MQZ-13-130302	42,062	>2X Background
MQZ-14-130302	49,386	>2X Background
MQZ-15-130302	55,522	>2X Background
MQZ-16-130302	21,836	>2X Background
MQZ-17-130302	27,408	>2X Background
MQZ-18-130302	33,717	>2X Background
MQZ-19-130302	28,505	>2X Background
MQZ-20-130302	97,068	>2X Background
MQZ-21-130302	55,597	>2X Background
MQZ-22-130302	46,610	>2X Background
MQZ-23-130302	27,479	>2X Background
MQZ-24-130302	28,702	>2X Background
MQZ-25-130302	24,145	>2X Background
MQZ-26-130302	27,705	>2X Background
MQZ-27-130302	52,942	>2X Background
MQZ-28-130302	49,711	>2X Background
MQZ-29-130302	25,336	>2X Background
MQZ-30-130302	15,540	
MQZ-31-130302	13,132	
MQZ-32-130302	16,013	
MQZ-33-130302	33,330	>2X Background
MQZ-34-130302	40,592	>2X Background
MQZ-35-130302	232,815	>2X Background; sample collected
MQZ-36-130302	68,897	>2X Background
MQZ-37-130302	115,657	>2X Background
MQZ-38-130302	72,504	>2X Background
MQZ-39-130302	49,422	>2X Background
MQZ-40-130302	58,415	>2X Background



Table 3-2
Stationary Gamma Measurements Summary
Marquez Uranium Mine
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico
(Continued)

Stationary Location ID	Gamma Activity (Counts Per Minute)	Remark
MQZ-41-130302	40,698	>2X Background
MQZ-42-130302	47,866	>2X Background
MQZ-43-130302	39,988	>2X Background
MQZ-44-130302	35,489	>2X Background
MQZ-45-130302	15,480	
MQZ-46-130302	43,646	>2X Background
MQZ-47-130302	90,392	>2X Background
MQZ-48-130302	88,235	>2X Background
MQZ-49-130302	212,575	>2X Background; sample collected
MQZ-50-130302	82,983	>2X Background
MQZ-51-130302	585,601	>2X Background; sample collected
MQZ-52-130302	191,195	>2X Background; sample collected
MQZ-53-130302	96,529	>2X Background
MQZ-54-130302	56,191	>2X Background
MQZ-55-130302	22,134	>2X Background
MQZ-56-130302	19,975	>2X Background
MQZ-57-130302	13,102	
MQZ-58-130302	13,028	
MQZ-59-130302	17,724	
MQZ-60-130302	59,201	>2X Background
MQZ-61-130302	135,829	>2X Background; sample collected
MQZ-62-130302	166,617	>2X Background; sample collected
MQZ-63-130302	510,086	>2X Background; sample collected
MQZ-64-130302	143,315	>2X Background; sample collected
MQZ-65-130302	135,378	>2X Background; sample collected
MQZ-66-130302	155,002	>2X Background; sample collected
MQZ-67-130302	23,400	>2X Background
MQZ-68-130302	22,158	>2X Background
MQZ-69-130302	14,110	
MQZ-70-130302	N/A	Point eliminated due to location
MQZ-71-130302	N/A	Point eliminated due to location
MQZ-72-130302	21,271	>2X Background
MQZ-73-130302	49,313	>2X Background
MQZ-74-130302	81,771	>2X Background
MQZ-75-130302	111,873	>2X Background



Table 3-2
Stationary Gamma Measurements Summary
Marquez Uranium Mine
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico
(Continued)

Stationary Location ID	Gamma Activity (Counts Per Minute)	Remark
MQZ-76-130302	96,603	>2X Background
MQZ-77-130302	49,206	>2X Background
MQZ-78-130302	21,415	>2X Background
MQZ-79-130302	13,982	
MQZ-80-130302	17,029	
MQZ-81-130302	20,844	>2X Background
MQZ-82-130302	22,510	>2X Background
MQZ-83-130302	20,510	>2X Background
MQZ-84-130302	47,375	>2X Background
MQZ-85-130302	15,858	
MQZ-BKGD-N-130303	13,379	Background location; sample collected
MQZ-BKGD-S-130303	8,511	Background location; sample collected
MQZ-BKGD-E-130303	7,827	Background location; sample collected
MQZ-BKGD-W-130303	9,074	Background location; sample collected



Table 3-3
Laboratory Results for Radioisotopes
Marquez Uranium Mine DRS
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico

Analyte	Units	3X Background	SampleID Date Type	MQZ-35-130303 3/3/2013 Field Sample	MQZ-49-130303 3/3/2013 Field Sample	MQZ-51-130303 3/3/2013 Field Sample	MQZ-51-2-130303 3/3/2013 Field Duplicate	MQZ-52-130303 3/3/2013 Field Sample	MQZ-61-130303 3/3/2013 Field Sample	MQZ-62-130303 3/3/2013 Field Sample	MQZ-63-130303 3/3/2013 Field Sample	MQZ-64-130303 3/3/2013 Field Sample
Radiation												
Actinium-228	pCi/g	2.076	--	1.97	0.863	0.717	4.65	0.124	-0.157	-0.0496	0.66	0.326
Bismuth-214	pCi/g	2.388	--	108	13.8	2500	2520	67.4	132	102	423	46.6
Lead-210	pCi/g	2.811	--	39.1	8.15	1050	982	37.9	61.4	59.8	119	27.6
Lead-212	pCi/g	2.148	--	4.04	0.355	81.2	75.7	1.13	0.773	3.33	10.9	0.727
Lead-214	pCi/g	2.538	--	109	14.3	2410	2470	67.3	130	102	427	45.9
Potassium-40	pCi/g	44.7	--	19.3	13.9	18.6	17.3	13.6	18.6	18.5	24.3	15.9
Protactinium-234m	pCi/g	7.35	--	66	12.5	1110	1080	26.5	134	39	1630	24.1
Radium-226	pCi/g	2.388	--	108	13.8	2500	2520	67.4	132	102	423	46.6
Thallium-208	pCi/g	1.788	--	0.585	0.378	11.9	9.84	0.389	0.77	0.654	1.9	0.529
Thorium-234	pCi/g	1.878	--	61.3	5.54	528	745	23.6	105	33.7	1430	21.6
Uranium-235	pCi/g	0.2049	--	5.6	1.37	64.2	82.5	3.23	8.57	4.69	98.5	2.64

pCi/g: picoCuries per gram
highlighted values are greater than or equal to 3x the background average concentration



Table 3-3
Laboratory Results for Radioisotopes
Marquez Uranium Mine DRS
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico

Analyte	Units	3X Background	SampleID Date Type	MQZ-65-130303 3/3/2013 Field Sample	MQZ-66-130303 3/3/2013 Field Sample	MQZ-BKGD-E-130303 3/3/2013 Field Sample	MQZ-BKGD-N-130303 3/3/2013 Field Sample	MQZ-BKGD-S-130303 3/3/2013 Field Sample	MQZ-BKGD-W-130303 3/3/2013 Field Sample
Radiation									
Actinium-228	pCi/g	2.076	--	0.834	0.462	0.616	1.25	0.453	0.449
Bismuth-214	pCi/g	2.388	--	52.1	83	0.904	1.72	0.258	0.303
Lead-210	pCi/g	2.811	--	18.1	51.9	0.772	1.87	0.55	0.555
Lead-212	pCi/g	2.148	--	1.68	1.75	0.58	1.7	0.283	0.301
Lead-214	pCi/g	2.538	--	54	82.8	0.875	1.94	0.276	0.292
Potassium-40	pCi/g	44.7	--	14.1	17.3	15.4	24.6	9.47	10.1
Protactinium-234m	pCi/g	7.35	--	2.6	47	2.09	5.21	1.34	1.17
Radium-226	pCi/g	2.388	--	52.1	83	0.904	1.72	0.258	0.303
Thallium-208	pCi/g	1.788	--	0.418	0.528	0.522	1.28	0.324	0.256
Thorium-234	pCi/g	1.878	--	20	13.8	0.0241	2.06	0.235	0.185
Uranium-235	pCi/g	0.2049	--	2.23	2.76	0.117	-0.0931	-0.0561	-0.007

pCi/g: picoCuries per gram
highlighted values are greater than or equal to 3x the background average concentration



Table 3-4
Laboratory Results for Metals
Marquez Uranium Mine DRS
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico

Analyte	Units	Background x 3	SampleID Date Type	MQZ-35-130303 3/3/2013 Field Sample	MQZ-49-130303 3/3/2013 Field Sample	MQZ-51-130303 3/3/2013 Field Sample	MQZ-51-2-130303 3/3/2013 Field Duplicate	MQZ-52-130303 3/3/2013 Field Sample	MQZ-61-130303 3/3/2013 Field Sample	MQZ-62-130303 3/3/2013 Field Sample	MQZ-63-130303 3/3/2013 Field Sample	MQZ-64-130303 3/3/2013 Field Sample	MQZ-65-130303 3/3/2013 Field Sample
Metals													
ALUMINUM	mg/kg	7770	--	2800	1700	2800	2700	1700	2500	2400	2100	1600	1800
ANTIMONY	mg/kg	6	--	2 UJL	2 UJL	2 UJL	2 UJL	2 UJL	2 UJL	2 UJL	2 UJL	2 UJL	2 UJL
ARSENIC	mg/kg	6.81	--	92	2.3	120	100	6.4	21	10	19	5.7	6.2
BARIUM	mg/kg	126.9	--	43	34	36	36	36	23	38	32	32	34
BERYLLIUM	mg/kg	1.575	--	0.5 U	0.51 U	2.9	2.3	0.5 U	0.63	0.5 U	2	0.5 U	0.49 U
CADMIUM	mg/kg	1.5	--	0.5 U	0.51 U	0.51 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 U	0.5 U	0.49 U
CALCIUM	mg/kg	14670	--	11000 JK	2000 JK	5100 JK	5600 JK	6300 JK	6000 JK	4900 JK	2800 JK	4100 JK	5700 JK
CHROMIUM	mg/kg	7.56	--	1.2	1.3	1 U	1 U	1.2	1.2	1.4	1 U	1.1	1.4
COBALT	mg/kg	6.15	--	1.7	1.1	2.1	1.8	1.2	3	1.7	1.9	1.1	1.7
COPPER	mg/kg	9.6	--	2.7	1.3	1 U	1.1	1.9	4.5	2.5	1 U	1.5	2.7
IRON	mg/kg	17550	--	9100	3300	7000	7400	3300	5700	4800	4500	3400	3900
LEAD	mg/kg	12.84	--	9.5	2.8	82	61	5.9	9.2	10	18	4.6	4.9
MAGNESIUM	mg/kg	5460	--	900	620	670	700	620	980	1100	690	660	1000
MANGANESE	mg/kg	288.9	--	87 JH	65 JH	77 JH	85 JH	81 JH	140 JH	120 JH	84 JH	76 JH	91 JH
MERCURY	mg/kg	0.0999	--	0.096	0.033 U	0.94	1.1	0.046	0.089	0.066	0.1	0.033 U	0.033 U
MOLYBDENUM	mg/kg	2.994	--	130	2.1	850	750	5	220	19	47	7.4	6.4
NICKEL	mg/kg	11.19	--	2 U	2 U	2 U	2 U	2 U	2.5	2.1	2 U	2 U	3.2
POTASSIUM	mg/kg	2109	--	1000 JK	430 JK	800 JK	760 JK	400 JK	490 JK	820 JK	570 JK	510 JK	560 JK
SELENIUM	mg/kg	1.854	--	42	2.6	62	55	22	46	32	36	10	13
SILVER	mg/kg	2.994	--	0.99 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.99 U
SODIUM	mg/kg	299.4	--	99 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	99 U
THALLIUM	mg/kg	12	--	1	1 U	1 U	1 U	5 U	1 U	5 U	1 U	5 U	0.99 U
TIN	mg/kg	15	--	5 U	5.1 U	5.1 U	5 U	5 U	5 U	5 U	5.1 U	5 U	4.9 U
URANIUM	mg/kg	1.344	--	130	11	4000	3200	55	270	83	3800	53	35
VANADIUM	mg/kg	19.29	--	120 JH	12 JH	440 JH	350 JH	72 JH	100 JH	73 JH	160 JH	51 JH	44 JH
ZINC	mg/kg	42.9	--	11	7.9	9.3	9.9	8.6	13	12	12	8.8	9.1

mg/kg: milligrams per kilogram
highlighted values are greater than or equal to 3x the background average concentration
U - Sample was analyzed for but not detected
J - The analyte was analyzed for, but the associated numerical value
may not be consistent with the amount actually present in the sample or may not be
consistent with the sample detection or quantitation limit
L - low bias
H - high bias
K - unknown bias

Table 3-4
Laboratory Results for Metals
Marquez Uranium Mine DRS
Grants Legacy Mine Sites
Crossroads Area, McKinley County, New Mexico

Analyte	Units	Background x 3	SampleID Date Type	MQZ-66-130303 3/3/2013 Field Sample	MQZ-BKGD-E-130303 3/3/2013 Field Sample	MQZ-BKGD-N-130303 3/3/2013 Field Sample	MQZ-BKGD-S-130303 3/3/2013 Field Sample	MQZ-BKGD-W-130303 3/3/2013 Field Sample
Metals								
ALUMINUM	mg/kg	7770	--	1500	2700	6000	830	810
ANTIMONY	mg/kg	6	--	2 UJL	2 UJL	2 UJL	2 UJL	2 UJL
ARSENIC	mg/kg	6.81	--	8.2	1.8	5.3	1 U	0.99 U
BARIUM	mg/kg	126.9	--	27	45	84	24	16
BERYLLIUM	mg/kg	1.575	--	0.5 U	0.5 U	0.6	0.5 U	0.5 U
CADMIUM	mg/kg	1.5	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CALCIUM	mg/kg	14670	--	4600 JK	1100 JK	18000 JK	260 JK	200 JK
CHROMIUM	mg/kg	7.56	--	0.99 U	2.3	5.8	1 U	0.99 U
COBALT	mg/kg	6.15	--	1.2	1.7	4.5	1 U	0.99 U
COPPER	mg/kg	9.6	--	1.8	3.1	7.7	1 U	0.99 U
IRON	mg/kg	17550	--	3600	4500	15000	2100	1800
LEAD	mg/kg	12.84	--	6.7	4.5	10	1.4	1.2
MAGNESIUM	mg/kg	5460	--	670	770	6100	220	180
MANGANESE	mg/kg	288.9	--	79 JH	110 JH	190 JH	36 JH	49 JH
MERCURY	mg/kg	0.0999	--	0.059	0.033 U	0.034 U	0.033 U	0.033 U
MOLYBDENUM	mg/kg	2.994	--	9.1	1 U	1 U	1 U	0.99 U
NICKEL	mg/kg	11.19	--	2 U	2.8	8.1	2 U	2 U
POTASSIUM	mg/kg	2109	--	390 JK	640 JK	1900 JK	110 JK	160 JK
SELENIUM	mg/kg	1.854	--	24	0.5 U	0.97	0.5 U	0.5 U
SILVER	mg/kg	2.994	--	0.99 U	1 U	1 U	1 U	0.99 U
SODIUM	mg/kg	299.4	--	99 U	100 U	100 U	100 U	99 U
THALLIUM	mg/kg	12	--	5 U	5 U	5 U	5 U	0.99 U
TIN	mg/kg	15	--	5 U	5 U	5 U	5 U	5 U
URANIUM	mg/kg	1.344	--	37	0.66	0.82	0.14	0.17
VANADIUM	mg/kg	19.29	--	70 JH	6.4 JH	14 JH	2.8 JH	2.5 JH
ZINC	mg/kg	42.9	--	9.1	12	37	4	4

mg/kg: milligrams per kilogram

highlighted values are greater than or equal to 3x the background average concentration

U - Sample was analyzed for but not detected

J - The analyte was analyzed for, but the associated numerical value

may not be consistent with the amount actually present in the sample or may not be

consistent with the sample detection or quantitation limit

L - low bias

H - high bias

K - unknown bias

